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**Requested Date:** 17 September 2019

**Sources Searched:** Medline, Embase, CINAHL.

## Hepatitis C Screening in Pregnancy

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[See full search strategy](#)

### **1. Hepatitis C infection among pregnant women in central Poland: Significance of epidemiological anamnesis and impact of screening tests to detect infection.**

**Author(s):** Aniszewska, Małgorzata; Pokorska-Śpiewak, Maria; Kowalik-Mikołajewska, Barbara; Pluta, Magdalena; Marczyńska, Magdalena

**Source:** Advances in clinical and experimental medicine : official organ Wroclaw Medical University; Mar 2019; vol. 28 (no. 3); p. 313-318

**Publication Date:** Mar 2019

**Publication Type(s):** Journal Article

**PubMedID:** 30659786

Available at [Advances in clinical and experimental medicine : official organ Wroclaw Medical University](#) - from Unpaywall

**Abstract:**BACKGROUND Mother-to-child transmission is one of the main sources of hepatitis C virus (HCV) infection in children. However, because of the asymptomatic course of the illness, certain women may not be aware of their infection. OBJECTIVES The aim of this study was to estimate the significance of epidemiological anamnesis in diagnoses of HCV infection in women of reproductive age and to evaluate how screening among pregnant women impacts the detection of HCV infection. MATERIAL AND METHOD Epidemiological interviews of 432 mothers infected with HCV (but free of human immunodeficiency virus (HIV)) were conducted in the Warsaw Hospital for Infectious Diseases (Poland) from 1998 to 2012. RESULTS Complaints or abnormalities in laboratory tests were the reasons for anti-HCV antibody testing in 28.2% of mothers, whereas specific interview responses or occupational health care services group affiliation were the reasons for testing in 35.6%. However, in a large group of women, infection was only detected because of screening examinations. The introduction of routine screening for pregnant women (since 2010 in Poland) has led to the increased detection of HCV infection in women who did not present with infection risk factors (9.9% before 2010 vs 46.1% after 2010). This practice has also led to an increase in the percentage of women diagnosed during pregnancy (21.5% before 2010 vs 30.8% after 2010). CONCLUSION Establishing HCV infection risk factors during the interview process is the most common indicator for serological testing; however, not all infected cases can be diagnosed in this manner. Screening for anti-HCV antibodies in pregnant women increases the detection of HCV infection in this group.

**Database:** Medline

## **2. Short-Term Effects and Long-Term Cost-Effectiveness of Universal Hepatitis C Testing in Prenatal Care.**

**Author(s):** Tasillo, Abriana; Eftekhari Yazdi, Golnaz; Nolen, Shayla; Schillie, Sarah; Vellozzi, Claudia; Epstein, Rachel; Randall, Liisa; Salomon, Joshua A; Linas, Benjamin P

**Source:** Obstetrics and gynecology; Feb 2019; vol. 133 (no. 2); p. 289-300

**Publication Date:** Feb 2019

**Publication Type(s):** Journal Article

**PubMedID:** 30633134

Available at [Obstetrics and gynecology](#) - from Ovid (LWW Total Access Collection 2019 - with Neurology)

**Abstract:**OBJECTIVETo estimate the clinical effects and cost-effectiveness of universal prenatal hepatitis C screening, and to calculate potential life expectancy, quality of life, and health care costs associated with universal prenatal hepatitis C screening and linkage to treatment.METHODSUsing a stochastic individual-level microsimulation model, we simulated the lifetimes of 250 million pregnant women matched at baseline with the U.S. childbearing population on age, injection drug use behaviors, and hepatitis C virus (HCV) infection status. Modeled outcomes included hepatitis C diagnosis, treatment and cure, lifetime health care costs, quality-adjusted life years (QALY) and incremental cost-effectiveness ratios comparing universal prenatal hepatitis C screening to current practice. We modeled whether neonates exposed to maternal HCV at birth were identified as such.RESULTSPregnant women with hepatitis C infection lived 1.21 years longer and had 16% lower HCV-attributable mortality with universal prenatal hepatitis C screening, which had an incremental cost-effectiveness ratio of \$41,000 per QALY gained compared with current practice. Incremental cost-effectiveness ratios remained below \$100,000 per QALY gained in most sensitivity analyses; notable exceptions included incremental cost-effectiveness ratios above \$100,000 when assuming mean time to cirrhosis of 70 years, a cost greater than \$500,000 per false positive diagnosis, or population HCV infection prevalence below 0.16%. Universal prenatal hepatitis C screening increased identification of neonates exposed to HCV at birth from 44% to 92%.CONCLUSIONSIn our model, universal prenatal hepatitis C screening improves health outcomes in women with HCV infection, improves identification of HCV exposure in neonates born at risk, and is cost-effective.

**Database:** Medline

### **3. Cost-Effectiveness of Universal Hepatitis C Virus Screening of Pregnant Women in The United States.**

**Author(s):** Chaillon, Antoine; Rand, Elizabeth B; Reau, Nancy; Martin, Natasha K

**Source:** Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Jan 2019

**Publication Date:** Jan 2019

**Publication Type(s):** Journal Article

**PubMedID:** 30689769

Available at [Clinical infectious diseases : an official publication of the Infectious Diseases Society of America](#) - from Oxford Journals - Medicine

**Abstract:**BackgroundHepatitis C Virus (HCV) chronic prevalence among pregnant women in the United States (U.S.) U.S. doubled nationally from 2009-2014 (~0.7%), yet many remain undiagnosed. Screening pregnant women is not recommended by the Society of Maternal-Fetal Medicine or the Centers for Disease Control and Prevention, despite new AASLD/IDSA guidelines recommending screening this group. We assessed the cost-effectiveness of HCV screening for pregnant women in the U.S.MethodsAn HCV natural history Markov model was used to evaluate the cost-effectiveness of universal HCV screening of pregnant women followed by treatment after pregnancy compared to background risk-based screening from a health care payer perspective. We assumed 0.73% HCV chronic prevalence among pregnant women based on national data. We assume no Medicaid reimbursement restrictions by fibrosis stage at baseline, but explore differing restrictions in sensitivity analyses. We assessed cost (in USD\$) and health outcomes (in quality-adjusted life years, QALYs) over a lifetime horizon, using new HCV drug costs of \$25,000/treatment. We assess mean incremental cost-effectiveness ratios (ICERs) under a willingness to pay threshold of \$50,000/QALY gained. We additionally evaluate potential population impact.ResultsUniversal antenatal screening was cost-effective in all treatment eligibility scenarios (mean ICER <\$3,000/QALY gained). Screening remained cost-effective at 0.07% prevalence, the lowest estimated prevalence state in the U.S. (Hawaii). Screening the ~5.04 million pregnant women in 2018 could result in detection and treatment of 33,000 women based on current fibrosis restrictions.ConclusionsUniversal screening for HCV among pregnant women in the U.S. is cost effective and should be recommended nationally.

**Database:** Medline

#### **4. Evaluating Women's Preferences for Hepatitis C Treatment During Pregnancy.**

**Author(s):** Kushner, Tatyana; Cohen, Jennifer; Tien, Phyllis C; Terrault, Norah A

**Source:** Hepatology communications; Nov 2018; vol. 2 (no. 11); p. 1306-1310

**Publication Date:** Nov 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30411077

Available at [Hepatology communications](#) - from Unpaywall

**Abstract:**There is a rising prevalence of hepatitis C (HCV) among women of child-bearing age nationally, which prompted a recommendation by national guidelines to screen all women for HCV during pregnancy. Women with HCV during pregnancy are at risk of perinatal transmission of HCV. Directly acting antiviral (DAA) therapy during pregnancy can potentially reduce the risk of perinatal transmission as well as cure women while they are engaged in antenatal care. However, data on the safety and efficacy of DAAs during pregnancy are limited. We aimed to evaluate the preferences of women with HCV regarding potential DAA treatment during pregnancy. We conducted a survey of women with a history of HCV followed in the University of California, San Francisco HCV clinic and in the Women's Interagency HIV Study (most of whom are coinfectd with HIV) to determine their preferences for DAA treatment during pregnancy. A total of 141 women completed the survey. Sixty percent reported that they would be willing to take antepartum DAA therapy if it lowered the risk of perinatal transmission. Only 21% reported that they would agree to take DAA therapy during pregnancy for self-cure; 20% of women stated that they would not, yet indicated that they might change their minds if there were more human data available regarding use of DAAs during pregnancy. In multivariable analysis, having a previous history of taking DAAs and being of childbearing age at the time of the survey were associated with willingness to take DAA medication during pregnancy (odds ratios 4.29 and 4.11, respectively). Conclusion: These results point to the need for further investigation of the role of HCV therapy during pregnancy.

**Database:** Medline

#### **5. Universal Screening of Pregnant Women for Hepatitis C: The Time Is Now.**

**Author(s):** Jhaveri, Ravi; Broder, Tina; Bhattacharya, Debika; Peters, Marion G; Kim, Arthur Y; Jonas, Maureen M

**Source:** Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Oct 2018; vol. 67 (no. 10); p. 1493-1497

**Publication Date:** Oct 2018

**Publication Type(s):** Journal Article

**PubMedID:** 30215670

Available at [Clinical infectious diseases : an official publication of the Infectious Diseases Society of America](#) - from Oxford Journals - Medicine

**Abstract:**The epidemiology of hepatitis C virus (HCV) has changed significantly over the last decade. Once most prevalent among older adults, the current burden has disproportionately affected young adults including women of childbearing age (WOCA). The Society for Maternal-Fetal Medicine recently issued guidelines that made no change in the recommendation to screen pregnant women based on risk factors. The current burden in young adults including WOCA supports a change in strategy away from risk-based screening to universal HCV screening in pregnancy. Universal screening offers several advantages that position us for a future where HCV treatment in pregnancy can happen and offers us progress toward the elimination of HCV.

**Database:** Medline

## **6. Enhanced identification of maternal hepatitis C virus infection using existing public health surveillance systems.**

**Author(s):** Gowda, Charitha; Kennedy, Samuel; Glover, Catherine; Prasad, Mona R.; Ling Wang; Honegger, Jonathan R.; Wang, Ling

**Source:** Paediatric & Perinatal Epidemiology; Jul 2018; vol. 32 (no. 4); p. 401-410

**Publication Date:** Jul 2018

**Publication Type(s):** Academic Journal

**PubMedID:** 29972246

Available at [Paediatric & Perinatal Epidemiology](#) - from Wiley Online Library

**Abstract:**Background: Hepatitis C virus (HCV) infection is under-recognized among US adults and children. Prenatal HCV screening may help close the diagnosis gap among women while also identifying at-risk infants. Current surveillance efforts for maternal HCV rely primarily on birth certificate data. We sought a more accurate assessment of HCV prevalence among pregnant women in Ohio by combining existing public health surveillance data. Methods: Vital Statistics (VS) birth certificate data and Ohio Disease Reporting System (ODRS) HCV case data, both available through the Ohio Department of Health, were linked to determine rates of past or present HCV infection among women giving birth from 2012 to 2015 in Ohio, overall and by county. Among women with available test results, the proportion with present HCV infection indicated by detectable viraemia during pregnancy was calculated. Results: Birth certificate data identified 4695 deliveries to women with past/present HCV infection during the study period. Linkage to ODRS revealed an additional 1778 deliveries to women with past/present infection, including 355 with confirmed viraemia during pregnancy. The prevalence of past/present HCV among pregnant women in Ohio rose from 0.82% in 2012 to 1.54% in 2015. Conclusions: Maternal HCV infection is under-recognized and increasing in prevalence. Current case identification processes are inadequate in pregnancy, even among women with prior positive HCV testing. Alternative approaches, including enhanced risk factor-based screening or universal prenatal screening in high prevalence settings, are needed to improve rates of HCV recognition among reproductive-aged women and newborns at risk of vertical transmission.

**Database:** CINAHL

## **7. Hepatitis C in Pregnancy.**

**Author(s):** Dibba, Pratima; Cholankeril, Rosann; Li, Andrew A; Patel, Meera; Fayek, Mariam; Dibble, Christy; Okpara, Nnenna; Hines, Autumn; Ahmed, Aijaz

**Source:** Diseases (Basel, Switzerland); Apr 2018; vol. 6 (no. 2)

**Publication Date:** Apr 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29702563

Available at [Diseases \(Basel, Switzerland\)](#) - from Unpaywall

**Abstract:**The prevalence of hepatitis C in pregnancy is as high as 3.6% in large cohorts. The prevalence of hepatitis C acquired by vertical transmission is 0.2% to 0.4% in the United States and Europe. Although screening is not recommended in the absence of certain risk factors, the importance of understanding hepatitis C in pregnancy lies in its association with adverse maternal and neonatal outcomes. There is potential for those infants infected by vertical transmission to develop chronic hepatitis C, cirrhosis or hepatocellular carcinoma. The risk of vertical transmission is increased when mothers are co-infected with Human Immunodeficiency Virus (HIV) or possess a high viral load. There is no clear data supporting that mode of delivery increases or reduces risk. Breastfeeding is not associated with increased risk of transmission. Premature rupture of

membranes, invasive procedures (such as amniocentesis), intrapartum events, or fetal scalp monitoring may increase risk of transmission. In pregnant patients, hepatitis C is diagnosed with a positive ELISA-3 and detectable Hepatitis C Virus (HCV) RNA viral load. Infants born to HCV-infected mothers should be tested for either HCV RNA on at least two separate occasions. Although prevention is not possible, there may be a role for newer direct acting anti-viral medications in the future.

**Database:** Medline

#### **8. Risk-Based Hepatitis C Screening in Pregnancy Is Less Reliable Than Universal Screening: A Retrospective Chart Review.**

**Author(s):** Boudova, Sarah; Mark, Katrina; El-Kamary, Samer S

**Source:** Open forum infectious diseases; Mar 2018; vol. 5 (no. 3); p. ofy043

**Publication Date:** Mar 2018

**Publication Type(s):** Journal Article

**PubMedID:** 29564364

Available at [Open forum infectious diseases](#) - from Europe PubMed Central - Open Access

Available at [Open forum infectious diseases](#) - from Oxford Journals - Open Access

Available at [Open forum infectious diseases](#) - from Unpaywall

**Abstract:**Current guidelines recommend only hepatitis C virus (HCV) risk-based screening during pregnancy. We examined screening practices at a major medical center and found inconsistent risk-based screening and the presence of HCV among women with no known risk factors. We make a case for the implementation of universal HCV screening during pregnancy.

**Database:** Medline

#### **9. Hepatitis C in Pregnancy in the Era of Direct-acting Antiviral Treatment: Potential Benefits of Universal Screening and Antepartum Therapy.**

**Author(s):** Bernstein, Helene B; Dunkelberg, Jeffrey C; Leslie, Kimberly K

**Source:** Clinical obstetrics and gynecology; Mar 2018; vol. 61 (no. 1); p. 146-156

**Publication Date:** Mar 2018

**Publication Type(s):** Journal Article Review

**PubMedID:** 29351151

Available at [Clinical obstetrics and gynecology](#) - from Ovid (LWW Total Access Collection 2019 - with Neurology)

**Abstract:**Hepatitis C in pregnancy is on the rise, and new direct-acting antiviral agents are available that cure the disease. Published recommendations need to be reviewed and clinically evaluated for the care of pregnant women who are at risk for or have chronic hepatitis C. Available evidence and some of the medical and ethical reasons to consider universal screening and antepartum therapy for hepatitis C during pregnancy are presented. Universal screening and proactive treatment during pregnancy is on the horizon, and these measures should be quickly evaluated for safety and implemented if appropriate.

**Database:** Medline

## **10. Hepatitis C in pregnancy: screening, treatment, and management.**

**Author(s):** Society for Maternal-Fetal Medicine (SMFM). Electronic address: [pubs@smfm.org](mailto:pubs@smfm.org); Hughes, Brenna L; Page, Charlotte M; Kuller, Jeffrey A

**Source:** American journal of obstetrics and gynecology; Nov 2017; vol. 217 (no. 5); p. B2

**Publication Date:** Nov 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28782502

**Abstract:** In the United States, 1-2.5% of pregnant women are infected with hepatitis C virus, which carries an approximately 5% risk of transmission from mother to infant. Hepatitis C virus can be transmitted to the infant in utero or during the peripartum period, and infection during pregnancy is associated with increased risk of adverse fetal outcomes, including fetal growth restriction and low birthweight. The purpose of this document is to discuss the current evidence regarding hepatitis C virus in pregnancy and to provide recommendations on screening, treatment, and management of this disease during pregnancy. The following are Society for Maternal-Fetal Medicine recommendations: (1) We recommend that obstetric care providers screen women who are at increased risk for hepatitis C infection by testing for anti-hepatitis C virus antibodies at their first prenatal visit. If initial results are negative, hepatitis C screening should be repeated later in pregnancy in women with persistent or new risk factors for hepatitis C infection (eg, new or ongoing use of injected or intranasal illicit drugs) (GRADE 1B). (2) We recommend that obstetric care providers screen hepatitis C virus-positive pregnant women for other sexually transmitted diseases, including HIV, syphilis, gonorrhea, chlamydia, and hepatitis B virus (GRADE 1B). (3) We suggest that patients with hepatitis C virus, including pregnant women, be counseled to abstain from alcohol (Best Practice). (4) We recommend that direct-acting antiviral regimens only be used in the setting of a clinical trial or that antiviral treatment be deferred to the postpartum period as direct-acting antiviral regimens are not currently approved for use in pregnancy (GRADE 1C). (5) We suggest that if invasive prenatal diagnostic testing is requested, women be counseled that data on the risk of vertical transmission are reassuring but limited; amniocentesis is recommended over chorionic villus sampling given the lack of data on the latter (GRADE 2C). (6) We recommend against cesarean delivery solely for the indication of hepatitis C virus (GRADE 1B). (7) We recommend that obstetric care providers avoid internal fetal monitoring, prolonged rupture of membranes, and episiotomy in managing labor in hepatitis C virus-positive women (GRADE 1B). (8) We recommend that providers not discourage breast-feeding based on a positive hepatitis C virus infection status (GRADE 1A).

**Database:** Medline

**11. Hepatitis C Cascade of Care Among Pregnant Women on Opioid Agonist Pharmacotherapy Attending a Comprehensive Prenatal Program.**

**Author(s):** Page, Kimberly; Leeman, Lawrence; Bishop, Steven; Cano, Sandra; Bakhireva, Ludmila

**Source:** Maternal & Child Health Journal; Sep 2017; vol. 21 (no. 9); p. 1778-1783

**Publication Date:** Sep 2017

**Publication Type(s):** Academic Journal

Available at [Maternal & Child Health Journal](#) - from SpringerLink - Medicine

Available at [Maternal & Child Health Journal](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Maternal & Child Health Journal](#) - from Unpaywall

**Abstract:**Background Given the large increases in opioid use among pregnant women and associations with hepatitis C virus (HCV) infection, screening pregnant women who are on (opioid agonist) pharmacotherapy for HCV infection has potential to inform medical care for these mothers as well as their newborns. We investigated the HCV testing cascade among pregnant women on pharmacotherapy in order to describe exposure and infection rates and to identify opportunities that would improve care. Methods Secondary analyses of laboratory results were performed for HCV testing, including anti-HCV, viremia (RNA) and genotype. Information was abstracted from the medical records of women who were followed at a comprehensive prenatal care clinic for women with substance use disorders at the University of New Mexico. Results The sample included 190 pregnant women, of whom 188 were on pharmacotherapy (43.7% on buprenorphine and 55.3% on methadone); the remaining two had tested positive for heroin or prescription opioids. A total of 178 (93.7%) were tested for anti-HCV, 94 (98.9%) of whom were tested for RNA, and 41 (57.7%) were genotyped. Prevalence of exposure to HCV by anti-HCV results was 53.3%, and 37.3% were positive for HCV RNA indicating chronic infection. Conclusions The high prevalence of exposure and infection with HCV in pregnant women involved in pharmacotherapy for a substance use disorder indicate a need for ongoing surveillance and testing for HCV. Identifying HCV during pregnancy is crucial because this identification would serve to enhance medical care and potentially prevent vertical transmission. Identifying HCV would also facilitate referrals to newly available curative HCV treatments following delivery.

**Database:** CINAHL



## **12. No. 96-The Reproductive Care of Women Living With Hepatitis C Infection**

**Author(s):** Boucher M.; Gruslin A.

**Source:** Journal of Obstetrics and Gynaecology Canada; Jul 2017; vol. 39 (no. 7)

**Publication Date:** Jul 2017

**Publication Type(s):** Article

**PubMedID:** 28625288

**Abstract:**Objective hepatitis C virus (HCV) is an increasingly important public health problem worldwide. Health care workers providing care to women of childbearing age are uniquely placed in their practices to identify a significant proportion of at-risk patients and to provide appropriate screening and counselling. The primary objective of this guideline is to provide accurate, current information to those offering reproductive care to women living with HCV. This document is also intended to raise awareness of HCV in both the medical and general populations. Options the areas of clinical practice considered in formulating this guideline are disease prevention, targeted screening of individuals at risk of contracting HCV, management of identified patients in the context of reproductive care, and the appropriate referral of patients to those with particular expertise. Outcomes implementation of these guidelines should facilitate identification of infected individuals. It should also result in improved physical and mental well-being for patients and their families and reduction in transmission rates. Evidence the literature between 1966 and 2000, including non-English language publications, was extensively searched utilizing Medline. A multidisciplinary group consisting of experts within the fields of obstetrics and gynaecology, infectious diseases, hepatology, and public health convened in Montreal in February 2000. The working group also included a patient and a representative from the Hepatitis C Society of Canada. The level of evidence for the recommendations has been determined using the criteria described by the Canadian Task Force on Periodic Health Examination. Benefits, harms and costs the public health benefits of increased identification of at-risk individuals, diagnosis, treatment, implementation of risk reduction behaviours, and reduced transmission rates, both on an individual and at the community level, are significant. However, it must be remembered that the diagnosis of a chronic disease may have far reaching effects for the individual patient and her family. Recommendations a) Screening \* Universal screening for HCV is not recommended, although targeted screening should be offered to all women falling into any at-risk category. Testing should take place following adequate counselling and informed consent of the patient (III B).b) Preconception and early pregnancy care \* Ideally, preconception or early pregnancy evaluation should include determination of risk of infection with hepatitis C, counselling, and testing as appropriate (III B). \* Patients aware of their HCV positive diagnosis should be evaluated before embarking on pregnancy for complications that may compromise maternal health during pregnancy (III B). \* Pregnancy is not generally contraindicated on grounds of HCV infection alone (Although it is contraindicated in the context of ribavirin therapy.) (III B).c) Care during pregnancy \* There is a risk of vertical transmission which is greater if the woman is also infected with human immunodeficiency virus (HIV) (II-2 A). \* Antenatal care will need to be tailored individually to meet the specific needs of the woman's medical and obstetrical condition, including the monitoring of liver function (II-2 A). \* Alcohol should be avoided (II-2 A). \* Immunization against hepatitis A and B should be provided as required (II-2 A). \* Routine Caesarean section is not recommended as a specific intrapartum measure to reduce the risk of vertical transmission of hepatitis C (II-2 D). \* Breastfeeding is not contraindicated (II-3 B).d) Care of infant \* All infants born to HCV positive mothers should be evaluated for evidence of hepatitis C infection (III A).e) Contraception and hormone replacement therapy \* Barrier methods should be recommended to those with multiple sexual partners (II-3 B). \* The extent of liver disease should be carefully evaluated before considering the use of hormonal contraception or hormone replacement therapy (III B).f) Universal precautions \* Universal precautions/routine practices and additional precautions are recommended in dealing with all patients for the protection of both health care worker and patient (II-2 A).Validation references were collected through Medline searches and comparison

made to existing current guidelines for assessment of consistency. External reviewers expert in their field were also consulted. Copyright © 2017

**Database:** EMBASE

### **13. Hepatitis C in Pregnancy: Review of Current Knowledge and Updated Recommendations for Management.**

**Author(s):** Page, Charlotte M; Hughes, Brenna L; Rhee, Eleanor H J; Kuller, Jeffrey A

**Source:** Obstetrical & gynecological survey; Jun 2017; vol. 72 (no. 6); p. 347-355

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article Review

**PubMedID:** 28661549

Available at [Obstetrical & gynecological survey](#) - from Ovid (LWW Total Access Collection 2019 - with Neurology)

**Abstract:** Importance An estimated 1% to 2.5% of pregnant women in the United States are infected with hepatitis C virus (HCV), which carries approximately a 6% risk of mother-to-infant transmission. Objectives The aims of this article are to review the current evidence on HCV in pregnancy and to provide updated recommendations for management. Evidence Acquisition Original research articles, review articles, and guidelines on HCV in general and specifically in pregnancy were reviewed, as were drug safety profiles from the Food and Drug Administration. Results Pregnancy appears to have a beneficial effect on the course of maternal chronic HCV infection. However, it is associated with an increased risk of adverse fetal outcomes, including fetal growth restriction and low birth weight, and can be transmitted to the infant in utero or during the peripartum period. No perinatal intervention has been shown to reduce the risk of vertical transmission, but some may increase this risk. To date, no treatment regimens for HCV have been approved for use in pregnancy, but the new ribavirin-free, direct-acting antiviral regimens are being used with high efficacy outside pregnancy. Conclusions and Relevance Hepatitis C virus infection in pregnancy generally does not adversely affect maternal well-being but is associated with adverse effects on the fetus because of pregnancy complications and vertical transmission. There are currently no approved treatment regimens for HCV in pregnancy; this should be an active area of research in obstetrics.

**Database:** Medline

#### **14. Hepatitis C infection and intrahepatic cholestasis of pregnancy: A systematic review and meta-analysis**

**Author(s):** Wijarnpreecha K.; Thongprayoon C.; Sanguankeo A.; Upala S.; Ungprasert P.; Cheungpasitporn W.

**Source:** Clinics and Research in Hepatology and Gastroenterology; Feb 2017; vol. 41 (no. 1); p. 39-45

**Publication Date:** Feb 2017

**Publication Type(s):** Article

**PubMedID:** 27542514

**Abstract:**Background/objectives Hepatitis C virus (HCV) infection is a major cause of cirrhosis worldwide. Several studies have linked HCV infection to a higher risk of developing intrahepatic cholestasis of pregnancy (ICP), but some data demonstrates contradictory results. To further investigate the association and estimated risk of ICP in patients with HCV infection, we conducted this meta-analysis to summarize all available evidence. Methods This study consists of two meta-analyses. A literature search was performed using MEDLINE and EMBASE from inception to January 2016. The first study included observational studies that reported relative risks, odds ratios, or hazard ratios of the associations between HCV infection and risk of ICP. The second analysis included studies comparing the risk of later HCV infection in ICP patients with those without ICP. Pooled odds ratios (OR) and 95% confidence intervals (CI) were calculated using a random-effect, generic inverse variance method. Results Three studies were included in the first analysis. The pooled OR of ICP in HCV-infected pregnant women compared to non-HCV pregnant women was 20.40 (95% CI, 9.39-44.33, I<sup>2</sup> = 55%). Two studies were included in the second analysis. The pooled OR of later HCV infection among ICP patients compared to non-ICP patients was 4.08 (95% CI, 3.13-5.31, I<sup>2</sup> = 0%). Conclusions Our meta-analysis demonstrates not only a higher risk of ICP among HCV-infected pregnant women but also an increased risk of later HCV infection among ICP patients. These findings suggest potential benefits of screening for hepatitis C in women with signs of ICP. Copyright © 2016 Elsevier Masson SAS

**Database:** EMBASE

#### **15. Hepatitis C Virus Screening in Pregnancy: Is It Time to Change Our Practice?**

**Author(s):** Prasad, Mona R.

**Source:** Obstetrics & Gynecology; Aug 2016; vol. 128 (no. 2); p. 229-230

**Publication Date:** Aug 2016

**Publication Type(s):** Academic Journal

**PubMedID:** 27400018

Available at [Obstetrics & Gynecology](#) - from Ovid (LWW Total Access Collection 2019 - with

Available at [Obstetrics & Gynecology](#) - from Unpaywall

**Abstract:**The author reflects on a study on the risk factor-based approach to hepatitis C virus (HCV) screening in pregnancy. Topics covered include the percentage increase in the rate of HCV between 2006 and 2012, the accepted risk factors for HCV testing and the fundamental principles of screening. Also mentioned is the lack of evidence that supports the intuition about HCV in pregnancy.

**Database:** CINAHL

**16. Increased Hepatitis C Virus (HCV) Detection in Women of Childbearing Age and Potential Risk for Vertical Transmission - United States and Kentucky, 2011-2014.**

**Author(s):** Koneru, Alaya; Nelson, Noele; Hariri, Susan; Canary, Lauren; Sanders, Kathy J; Maxwell, Justine F; Huang, Xiaohua; Leake, John A D; Ward, John W; Vellozzi, Claudia

**Source:** MMWR. Morbidity and mortality weekly report; Jul 2016; vol. 65 (no. 28); p. 705-710

**Publication Date:** Jul 2016

**Publication Type(s):** Journal Article

**PubMedID:** 27442053

Available at [MMWR. Morbidity and mortality weekly report](#) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:** Hepatitis C virus (HCV) infection is a leading cause of liver-related morbidity and mortality (1). Transmission of HCV is primarily via parenteral blood exposure, and HCV can be transmitted vertically from mother to child. Vertical transmission occurs in 5.8% (95% confidence interval = 4.2%-7.8%) of infants born to women who are infected only with HCV and in up to twice as many infants born to women who are also infected with human immunodeficiency virus (HIV) (2) or who have high HCV viral loads (3,4); there is currently no recommended intervention to prevent transmission of infection from mother to child (3). Increased reported incidence of HCV infection among persons aged  $\leq 30$  years (5,6) with similar increases among women and men in this age group (6), raises concern about increases in the number of pregnant women with HCV infection, and in the number of infants who could be exposed to HCV at birth. Data from one large commercial laboratory and birth certificate data were used to investigate trends in HCV detection among women of childbearing age,\* HCV testing among children aged  $\leq 2$  years, and the proportions of infants born to HCV-infected women nationally and in Kentucky, the state with the highest incidence of acute HCV infection during 2011-2014 (6). During 2011-2014, commercial laboratory data indicated that national rates of HCV detection (antibody or RNA positivity(+)) among women of childbearing age increased 22%, and HCV testing (antibody or RNA) among children aged  $\leq 2$  years increased 14%; birth certificate data indicated that the proportion of infants born to HCV-infected mothers increased 68%, from 0.19% to 0.32%. During the same time in Kentucky, the HCV detection rate among women of childbearing age increased  $>200\%$ , HCV testing among children aged  $\leq 2$  years increased 151%, and the proportion of infants born to HCV-infected women increased 124%, from 0.71% to 1.59%. Increases in the rate of HCV detection among women of childbearing age suggest a potential risk for vertical transmission of HCV. These findings highlight the importance of following current CDC recommendations to identify, counsel, and test persons at risk for HCV infection (1,7), including pregnant women, as well as consider developing public health policies for routine HCV testing of pregnant women, and expanding current policies for testing and monitoring children born to HCV-infected women. Expansion of HCV reporting and surveillance requirements will enhance case identification and prevention strategies.

**Database:** Medline

**17. Diagnosis of hepatitis C virus infection in pregnant women in the healthcare system in Poland: Is it worth the effort?**

**Author(s):** Walewska-Zielecka, Bożena; Religioni, Urszula; Juszczak, Grzegorz; Czerw, Aleksandra; Wawrzyniak, Zbigniew; Soszyński, Piotr

**Source:** Medicine; Jul 2016; vol. 95 (no. 30); p. e4331

**Publication Date:** Jul 2016

**Publication Type(s):** Journal Article

**PubMedID:** 27472714

Available at [Medicine](#) - from Europe PubMed Central - Open Access

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**Abstract:**The hepatitis C virus (HCV) is globally recognized as a serious public health concern. Current statistics indicate that approximately 2% of people worldwide and 1.9% of people in Poland suffer from HCV infection. This study was conducted to assess the anti-HCV seroprevalence in pregnant women in Poland and subsequently provide recommendations on the rationale for obligatory screening. A total of 42,274 women participated in our study, of which 16,130 were pregnant. We were granted access to their health data stored in the form of electronic medical records kept by the network of outpatient clinics throughout Poland. The lowest rate of positive anti-HCV test results was found in women ages 25 to 34 (0.73%); however, younger and older age groups had similar rates (15-24=0.86%; 35-44=0.84%). Additional analysis of data from the period between 2011 and 2014 revealed a downward trend in the proportion of positive anti-HCV tests among pregnant women (mean positive anti-HCV =  $-0.001 \times \text{year} + 1.9451$ ;  $R=0.7274$ ). Regardless of the gradual increase in the number of female patients undergoing screening between 2004 and 2015, there has been a constant decrease in the rate of positive cases. The rate of pregnant women potentially infected with HCV was twice as lower than that in a control group of women undergoing tests for other medical circumstances: 0.76% vs 1.67% ( $P<0.0001$ ). Analysis of real-world data of female patients in Poland provides evidence that screening based on an individual's medical history and behavioral risk factors in clinical circumstances would be more effective than obligatory testing of all pregnant women.

**Database:** Medline

**18. Retrospective hepatitis C seroprevalence screening in the antenatal setting-should we be screening antenatal women?**

**Author(s):** Orkin, Chloe; Jeffery-Smith, Anna; Foster, Graham R; Tong, C Y William

**Source:** BMJ open; May 2016; vol. 6 (no. 5); p. e010661

**Publication Date:** May 2016

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 27231001

Available at [BMJ open](#) - from Europe PubMed Central - Open Access

Available at [BMJ open](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMJ open](#) - from Unpaywall

**Abstract:**OBJECTIVES An unlinked anonymous seroprevalence study was conducted to estimate the prevalence of hepatitis C virus (HCV) infection in samples derived from antenatal clinic attendees at 2 East London Hospitals. An unexpectedly high HCV seroprevalence of 2.6% (1.2% viraemic) had been revealed during an unlinked study of the emergency department at 1 of these

hospitals. DESIGN 1000 stored residual samples were tested for HCV antibody (anti-HCV) and reactive samples were further tested for HCV RNA. The study was reviewed by the East Midland NRES ethics committee project ID 181154, approval number 15/WS/0125. RESULTS The anti-HCV reactivity rate was 0.5% (5/1000) with 0.1% (1/1000) confirmed viraemic. Prevalence for the other blood-borne viruses was higher: 1% (10/1000) were hepatitis B surface antigen positive and 0.3% were HIV antigen/antibody positive (3/1000). There were no co-infections. CONCLUSIONS More data to establish the prevalence of HCV in the antenatal population is needed. The addition of anti-HCV testing to the well-established antenatal screening programme provides a unique opportunity to impact on the health of pregnant women, their children, partners and future pregnancies in this new era of treatment for hepatitis C.

**Database:** Medline

### **19. Hepatitis C virus seroprevalence in pregnant women delivering live-born infants in North Thames, England in 2012.**

**Author(s):** Cortina-Borja, M; Williams, D; Peckham, C S; Bailey, H; Thorne, C

**Source:** Epidemiology and infection; Feb 2016; vol. 144 (no. 3); p. 627-634

**Publication Date:** Feb 2016

**Publication Type(s):** Journal Article

**PubMedID:** 26178148

Available at [Epidemiology and infection](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Epidemiology and infection](#) - from Unpaywall

**Abstract:** To estimate HCV seroprevalence in subpopulations of women delivering live-born infants in the North Thames region in England in 2012, an unlinked anonymous (UA) cross-sectional survey of neonatal dried blood spot samples was conducted. Data were available from 31467 samples from live-born infants received by the North Thames screening laboratory. Thirty neonatal samples had HCV antibodies, corresponding to a maternal seroprevalence of 0.095% (95% confidence interval 0.067-0.136). Estimated HCV seroprevalences in women born in Eastern Europe, Southern Asia and the UK were 0.366%, 0.162% and 0.019%, respectively. For women born in Eastern Europe seroprevalence was highest in those aged around 27 years, while in women born in the UK and Asia-Pacific region, seroprevalence increased significantly with age. HCV seroprevalence in UK-born women whose infant's father was also UK-born was 0.016%. One of the 30 HCV-seropositive women was HIV-1 seropositive. Estimated HCV seroprevalence for women delivering live-born infants in North Thames in 2012 (0.095%) was significantly lower than that reported in an earlier UA survey in 1997-1998 (0.191%). Data indicate that the cohort of UK-born HCV-seropositive women is ageing and that, in this area of England, most perinatally HCV-exposed infants were born to women themselves born in Southern Asia or Eastern Europe.

**Database:** Medline

## **20. Screening and evaluation of hepatitis C virus infection in pregnant women on opioid maintenance therapy: A retrospective cohort study.**

**Author(s):** Krans, Elizabeth E.; Zickmund, Susan L.; Rustgi, Vinod K.; Park, Seo Young; Dunn, Shannon L.; Schwarz, Eleanor B.

**Source:** Substance Abuse; Jan 2016; vol. 37 (no. 1); p. 88-95

**Publication Date:** Jan 2016

**Publication Type(s):** Academic Journal

Available at [Substance Abuse](#) - from Unpaywall

**Abstract:**Background: The purpose of this study was to describe the delivery of prenatal care services to women with opioid use disorder (OUD) on opioid maintenance therapy at high risk for hepatitis C virus (HCV) infection. Methods: We conducted a retrospective cohort evaluation of 791 pregnant women with OUD from 2009 to 2012. HCV screening was defined as documentation of (a) an anti-HCV antibody test or (b) a provider discussion regarding a known HCV diagnosis during pregnancy. Multivariate logistic regression was used to identify predictors of HCV screening during pregnancy. Results: Among 791 pregnant women with OUD, 611 (77.2%) were screened for HCV infection and 369/611 (60.4%) were HCV positive. In multivariable analysis, patients who were married (odds ratio [OR] = 0.52; 95% confidence interval [CI] = 0.29, 0.91), used buprenorphine (OR = 0.45; 95% CI = 0.28, 0.71), and were cared for by private practice providers (OR = 0.29; 95% CI = 0.19, 0.45) were significantly less likely to be screened. In contrast, patients who used benzodiazepines (OR = 1.72; 95% CI = 1.02, 2.92), intravenous (IV) opioids (OR = 6.15; 95% CI = 3.96, 9.56), had legal problems (OR = 2.23; 95% CI = 1.12, 4.45), had children not in their custody (OR = 1.81; 95% CI = 1.01, 3.24), and who had a partner with substance abuse history (OR = 2.38; 95% CI = 1.23, 4.59) were significantly more likely to be screened. Of 369 HCV-positive patients, a new diagnosis of HCV was made during pregnancy for 108 (29.3%) patients. Only 94 (25.5%) had HCV viral load testing, 61 (16.5%) had HCV genotype testing, and 38 (10.4%) received an immunization for hepatitis A. Although 285 (77.2%) patients were referred to hepatology, only 71 (24.9%) attended the consultation. Finally, only 6 (1.6%) patients received HCV treatment 1 year following delivery. Conclusions: Prenatal care approaches to HCV infection remain inconsistent, and the majority of patients diagnosed with HCV infection during pregnancy do not receive treatment after delivery.

**Database:** CINAHL



## **21. Hepatitis C Virus universal screening versus risk based selective screening during pregnancy.**

**Author(s):** Waruingi, W; Mhanna, M J; Kumar, D; Abughali, N

**Source:** Journal of neonatal-perinatal medicine; 2015; vol. 8 (no. 4); p. 371-378

**Publication Date:** 2015

**Publication Type(s):** Research Support, Non-u.s. Gov't Comparative Study Journal Article  
Observational Study

**PubMedID:** 26836823

**Abstract:**OBJECTIVESWe sought to compare the value of HCV universal screening versus risk-based selective screening in pregnant women.STUDY DESIGNIn a prospective observational study (Jan 2012 - March 2012), pregnant women, in a high risk inner city clinic, who were at "low risk" for HCV infection were tested for HCV antibodies (universal screening) and their medical records were compared to the medical records of pregnant women who were at "high risk" (risk based selective screening as assessed by their obstetricians' screening questionnaire).RESULTSDuring the study period, 419 women delivered at our institution with 8.8% (37/419) at high risk for HCV. In 95% (183/193) of available and consenting low risk women, HCV antibody testing was done. The prevalence of HCV was 3.18% (7/220; 95% CI: 1.36-6.50) in all tested women versus 0.95% (4/419; 95% CI: 0.31-2.59) in risk-based selectively tested women. Overall the screening questionnaire had a sensitivity of 0.85 (0.42-0.99) and a specificity of 0.52 (0.45-0.58) in all women who had HCV antibody testing and questionnaire screening.CONCLUSIONSUsing a screening questionnaire to identify women at risk for HCV infection during pregnancy under-estimates the real prevalence of HCV. A universal screening should be considered in high risk cities.

**Database:** Medline

## **22. Cost-effectiveness of HBV and HCV screening strategies - A systematic review of existing modelling techniques**

**Author(s):** Geue C.; Wu O.; Xin Y.; Heggie R.; Hutchinson S.; Martin N.K.; Fenwick E.; Goldberg D.

**Source:** PLoS ONE; Dec 2015; vol. 10 (no. 12)

**Publication Date:** Dec 2015

**Publication Type(s):** Article

Available at [PLoS ONE](#) - from Europe PubMed Central - Open Access

Available at [PLoS ONE](#) - from Public Library of Science (PLoS)

Available at [PLoS ONE](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [PLoS ONE](#) - from Unpaywall

**Abstract:**Introduction Studies evaluating the cost-effectiveness of screening for Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) are generally heterogeneous in terms of risk groups, settings, screening intervention, outcomes and the economic modelling framework. It is therefore difficult to compare cost-effectiveness results between studies. This systematic review aims to summarise and critically assess existing economic models for HBV and HCV in order to identify the main methodological differences in modelling approaches. Methods A structured search strategy was developed and a systematic review carried out. A critical assessment of the decision-analytic models was carried out according to the guidelines and framework developed for assessment of decision-analytic models in Health Technology Assessment of health care interventions. Results The overall approach to analysing the cost-effectiveness of screening strategies was found to be broadly consistent for HBV and HCV. However, modelling parameters and related structure differed between models, producing different results. More recent publications performed better against a performance matrix, evaluating model components and methodology. Conclusion When assessing



screening strategies for HBV and HCV infection, the focus should be on more recent studies, which applied the latest treatment regimes, test methods and had better and more complete data on which to base their models. In addition to parameter selection and associated assumptions, careful consideration of dynamic versus static modelling is recommended. Future research may want to focus on these methodological issues. In addition, the ability to evaluate screening strategies for multiple infectious diseases, (HCV and HIV at the same time) might prove important for decision makers. Copyright © 2015 Geue et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Database:** EMBASE

### **23. Is antenatal screening for hepatitis C virus cost-effective? A decade's experience at a London centre.**

**Author(s):** Selvapatt, Nowlan; Ward, Thomas; Bailey, Heather; Bennett, Hayley; Thorne, Claire; See, Lay-May; Tudor-Williams, Gareth; Thursz, Mark; McEwan, Phil; Brown, Ashley

**Source:** Journal of hepatology; Oct 2015; vol. 63 (no. 4); p. 797-804

**Publication Date:** Oct 2015

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 26024832

Available at [Journal of hepatology](#) - from Unpaywall

**Abstract:**BACKGROUND & AIMSThis study aims to assess the cost-effectiveness of a routine universal antenatal hepatitis C virus (HCV) screening programme at a London centre.METHODSTen years' retrospective antenatal screening and outcome data informed a cost-effectiveness analysis using the previously validated MONARCH model. The cost and quality of life outcomes associated with the screening and treatment of newly identified hepatitis C cases were used to generate cost-effectiveness estimates for the screening programme.RESULTSA total of 35,355 women were screened between 1st November 2003 and 1st March 2013; 136 women (0.38%) were found to be HCV antibody positive. Of 78 (0.22%) viraemic cases, 44 (0.12%) were newly diagnosed. In addition, the screening programme identified three (6.8%) vertical transmissions in children of newly diagnosed mothers. Of 16 newly diagnosed mothers biopsied, all were in the F0-F2 METAVIR disease stages, and 50% had HCV genotype 1. Postnatal treatment with pegylated interferon and ribavirin was initiated in 19 women, with 14 (74%) achieving sustained virologic response. The total cost of screening and confirmation of diagnoses was estimated to be £240,641. This translates to £5469 per newly diagnosed individual. The incremental cost-effectiveness ratio of this screening and treatment strategy was £2400 per QALY gained. Treatment with newer direct-acting antiviral regimens would have a projected cost of £9139 per QALY gained, well below the £20,000-30,000/QALY gained willingness-to-pay threshold applied by policy advisory bodies.CONCLUSIONSThis study demonstrates that an antenatal screening and treatment programme is feasible and effective, at a cost considered acceptable.

**Database:** Medline

#### **24. Antenatal screening for hepatitis C: Universal or risk factor based?**

**Author(s):** Wilson, Erin; Beckmann, Michael

**Source:** The Australian & New Zealand journal of obstetrics & gynaecology; Aug 2015; vol. 55 (no. 4); p. 318-322

**Publication Date:** Aug 2015

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article Evaluation Studies

**PubMedID:** 26121909

Available at [The Australian & New Zealand journal of obstetrics & gynaecology](#) - from Wiley Online Library

**Abstract:**BACKGROUND There is no clear consensus on whether antenatal screening for hepatitis C (HCV) should be universal, or based on an assessment of risk factors. AIM To report the HCV status and risk factors for HCV amongst women delivering at a tertiary metropolitan hospital in order to better understand the implications of changing from universal to risk factor based HCV screening. MATERIALS AND METHODS An audit of practice was performed at Mater Mothers' Hospitals (Brisbane) using routinely collected data from 2007 to 2013 (n = 57,659). The demographic and clinical characteristics of HCV-positive women (n = 281) were compared with those with a negative result (n = 57,378), and compared for the presence or absence of risk factors for HCV. RESULTS From a cohort of 57,659 women, 281 (0.5%) women were HCV positive. HCV-positive women were more likely to have received blood products (10.0 vs 3.1%; P < 0.001), have a history of illicit drug use (72.2 vs 9.8%; P < 0.001), and have at least one risk factor for HCV infection (92 vs 17%; P < 0.001). Of the HCV-positive women, only seven of the 281 (2.5%) had no identifiable risk factor, whilst most (83%) HCV-negative women did not have any documented risk factor for HCV infection. CONCLUSION Most women testing positive for HCV antibodies have identifiable risk factors; however, a small number will not be detected if a risk factor based screening approach is adopted. The benefits of universal screening must be weighed against the potential cost savings of a risk factor based screening program.

**Database:** Medline

#### **25. Hepatitis C virus infection among pregnant women in Slovenia: study on 31,849 samples obtained in four screening rounds during 1999, 2003, 2009 and 2013.**

**Author(s):** Kopilović, B; Poljak, M; Seme, K; Klavs, I

**Source:** Euro surveillance : bulletin European sur les maladies transmissibles = European communicable disease bulletin; Jun 2015; vol. 20 (no. 22); p. 21144

**Publication Date:** Jun 2015

**Publication Type(s):** Journal Article

**PubMedID:** 26062646

Available at [Euro surveillance : bulletin European sur les maladies transmissibles = European communicable disease bulletin](#) - from Unpaywall

**Abstract:** The majority of people infected with hepatitis C virus (HCV) are unaware of their infection. Assessment of the prevalence of HCV infection in the general population and in key populations at increased risk is needed for evidence-based testing policies. Our objectives were to estimate the prevalence of antibodies to HCV (anti-HCV), the prevalence of HCV viraemia (HCV RNA), and to describe HCV genotype distribution among pregnant women in Slovenia. Unlinked anonymous testing was performed on residual sera obtained from 31,849 pregnant women for routine syphilis screening during 1999, 2003, 2009, and 2013. Anti-HCV reactive specimens were tested for HCV RNA and HCV genotypes were determined. Annual prevalence of anti-HCV ranged between 0.09% (95%

confidence interval (CI): 0.03–0.18) in 2009 and 0.21% (95% CI: 0.12–0.34) in 2003 and HCV RNA positivity between 0.06% (95% CI: 0.02–0.14) in 2009 and 0.14% (95% CI: 0.07–0.25) in 2003. We observed no statistically significant differences in anti-HCV or HCV RNA prevalence between age groups (<20, 20–29 and ≥30 years) in any year and no trend in time. Of 29 HCV active infections, 19 were with genotype 1 and 10 with genotype 3. HCV infection among pregnant women was rare suggesting a low burden in the Slovenian general population. Antenatal screening for HCV in Slovenia could not be recommended.

**Database:** Medline

## **26. Hepatitis C virus, pregnancy and postnatal care.**

**Author(s):** Polis, Suzanne

**Source:** Gastrointestinal Nursing; Jun 2015; vol. 13 (no. 5); p. 26-32

**Publication Date:** Jun 2015

**Publication Type(s):** Academic Journal

Available at [Gastrointestinal Nursing](#) - from MAG Online Library - Internurse

**Abstract:**Infection with hepatitis C virus (HCV) has a relatively benign effect on maternal health in the absence of liver cirrhosis or intra-hepatic cholestasis of pregnancy. Cell-mediated immunity diminishes during pregnancy, inadvertently lowering serum transaminase levels and increasing HCV viral load. Rates of transmission from an infected woman to her newborn are relatively low and may occur intrauterine, intrapartum, or during the postnatal period. No interventions during pregnancy or at the time of delivery have been shown to reduce the risk. Hepatology nurses play a pivotal role in developing clinical and communication pathways between hepatology and obstetric services. In contrast to obstetric care, hepatology care of women with HCV extends beyond pregnancy, encompassing long-term monitoring of HCV and associated liver disease, access to anti-viral treatments, ongoing counselling, education, advocacy and support.

**Database:** CINAHL

## **27. Reliability of risk-based screening for hepatitis C virus infection among pregnant women in Egypt.**

**Author(s):** El-Kamary, Samer S; Hashem, Mohamed; Saleh, Doa'a A; Ehab, Mohamed; Sharaf, Sahar A; El-Mougy, Fatma; Abdelsalam, Lobna; Jhaveri, Ravi; Aboulnasr, Ahmed; El-Ghazaly, Hesham

**Source:** Journal of Infection; May 2015; vol. 70 (no. 5); p. 512-519

**Publication Date:** May 2015

**Publication Type(s):** Academic Journal

**PubMedID:** 25623176

**Abstract:**Objectives: The Centers for Disease Control and Prevention (CDC) only recommends risk-based HCV screening for pregnant women in the United States. This study sought to determine the reliability of risk-based versus universal HCV screening for pregnant women in Egypt, a country with the world's highest HCV prevalence that also relies on risk-based screening, and to identify additional characteristics that could increase the reliability of risk-based screening. Methods: Pregnant women attending the Cairo University antenatal clinic were tested for anti-HCV antibodies and RNA, and demographic characteristics and risk factors for infection were assessed. Results: All 1250 pregnant women approached agreed to participate (100%) with a mean age of  $27.4 \pm 5.5$  years (range:16-45). HCV antibodies and RNA were positive in 52 (4.2%) and 30 (2.4%) women respectively. After adjustment, only age (OR:1.08, 95%CI:1.002-1.16,  $p < 0.01$ ), history of prior

pregnancies (OR:1.20, 95%CI:1.01-1.43,  $p < 0.04$ ), and working in the healthcare sector (OR:8.68, 95%CI:1.72-43.62,  $p < 0.01$ ), remained significantly associated with chronic HCV infection. Conclusions: Universal antenatal HCV screening was widely accepted (100%) and traditional risk-based screening alone would have missed 3 (10%) chronically infected women, thereby supporting universal screening of pregnant women whenever possible. Otherwise, risk-based screening should be modified to include history of prior pregnancy and healthcare employment.

**Database:** CINAHL

## **28. Dried blood spot testing for the antenatal screening of HTLV, HIV, syphilis, toxoplasmosis and hepatitis B and C: prevalence, accuracy and operational aspects.**

**Author(s):** Boa-Sorte, Ney; Purificação, Antônio; Amorim, Tatiana; Assunção, Lorena; Reis, Alan; Galvão-Castro, Bernardo

**Source:** The Brazilian journal of infectious diseases : an official publication of the Brazilian Society of Infectious Diseases; 2014; vol. 18 (no. 6); p. 618-624

**Publication Date:** 2014

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 25022566

Available at [The Brazilian journal of infectious diseases : an official publication of the Brazilian Society of Infectious Diseases](#) - from Unpaywall

**Abstract:** INTRODUCTION Screening for vertically transmitted infection is mandatory and must be conducted at the first prenatal consultation. The most vulnerable women's groups are those at the lowest socio-economic level. Dried blood spot testing on filter paper could represent a secure way to screen pregnant women in the prenatal period. METHODS A cross-sectional study was conducted between November 2009 and March 2010, in the Metropolitan Region of Salvador, Bahia, Brazil, to compare the accuracy of the dried blood spot in filter paper and venipuncture serological as screening methods for HIV, HTLV, VHB, VHC, Treponema pallidum, and Toxoplasma gondii during prenatal period. Results of the venous blood sample collected in tubes were considered the gold standard. RESULTS Serum samples and dried blood spot were obtained from 692 pregnant women aged between 14 and 42 years, with a median age of 26. Thirteen women were seropositive for T. gondii (1.88%; 95% CI: 0.60-2.71%), five for T. pallidum (0.72%; 95% CI: 0.15-1.61%), two for HBV (0.29%; 95% CI: 0.050-0.95%) and one for HTLV-1 (0.14%; 95% CI: 0.01-0.71%). No one was positive for HCV and HIV. The dried blood spot accuracy for syphilis and HTLV were 100% (95% CI: 99.25-100) and 100% (95% CI: 99.45-100%), respectively. The average time between blood collection and recording of the sample in the reference laboratory was 4.93 (3.82) days and between dried blood spot processing and active search for pregnant women was 3.44 (4.27) days. CONCLUSION The use of dried blood spot may represent a secure way to expedite access to results of vertically transmitted diseases in the prenatal period, particularly in regions with scarce healthcare resources.

**Database:** Medline

## **29. Hepatitis B and C in pregnancy: a review and recommendations for care.**

**Author(s):** Dunkelberg, J C; Berkley, E M F; Thiel, K W; Leslie, K K

**Source:** Journal of perinatology : official journal of the California Perinatal Association; Dec 2014; vol. 34 (no. 12); p. 882-891

**Publication Date:** Dec 2014

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article Review

**PubMedID:** 25233195

Available at [Journal of perinatology : official journal of the California Perinatal Association](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Journal of perinatology : official journal of the California Perinatal Association](#) - from Unpaywall

**Abstract:**Our objective was to provide a comprehensive review of the current knowledge regarding pregnancy and hepatitis B virus (HBV) or hepatitis C virus (HCV) infection as well as recent efforts to reduce the rate of mother-to-child transmission (MTCT). Maternal infection with either HBV or HCV has been linked to adverse pregnancy and birth outcomes, including MTCT. MTCT for HBV has been reduced to approximately 5% overall in countries including the US that have instituted postpartum neonatal HBV vaccination and immunoprophylaxis with hepatitis B immune globulin. However, the rate of transmission of HBV to newborns is nearly 30% when maternal HBV levels are greater than 200 000 IU ml<sup>-1</sup> (>6 log<sub>10</sub> copies ml<sup>-1</sup>). For these patients, new guidelines from the European Association for the Study of the Liver (EASL) and the Asian Pacific Association for the Study of the Liver (APASL) indicate that, in addition to neonatal vaccination and immunoprophylaxis, treating with antiviral agents such as tenofovir disoproxil fumarate or telbivudine during pregnancy beginning at 32 weeks of gestation is safe and effective in preventing MTCT. In contrast to HBV, no therapeutic agents are yet available or recommended to further decrease the risk of MTCT of HCV, which remains 3 to 10%. HCV MTCT can be minimized by avoiding fetal scalp electrodes and birth trauma whenever possible. Young women with HCV should be referred for treatment post delivery, and neonates should be closely followed to rule out infection. New, better-tolerated treatment regimens for HCV are now available, which should improve outcomes for all infected individuals.

**Database:** Medline

## **30. Prevention and management of viral hepatitis in pregnancy**

**Author(s):** Rac M.W.F.; Sheffield J.S.

**Source:** Obstetrics and Gynecology Clinics of North America; Dec 2014; vol. 41 (no. 4); p. 573-592

**Publication Date:** Dec 2014

**Publication Type(s):** Review

**PubMedID:** 25454991

**Abstract:**Of the 5 types of viral hepatitis (HAV-HEV), HBV and HCV are by far the most common causes of chronic hepatitis in both pregnant and nonpregnant populations, causing more than 50% of cirrhosis cases and 78% of cases of primary liver cancer. Infection during pregnancy can have adverse effects on both the mother and her fetus. For all 5 viral hepatitis syndromes, early identification allows appropriate measures to be taken to optimize pregnancy outcomes and minimize the risk of perinatal transmission. This article reviews the prevention and management of all 5 viral hepatitis syndromes during pregnancy. Copyright © 2014 Elsevier Inc.

**Database:** EMBASE

### **31. Is adding HCV screening to the antenatal national screening program in Amsterdam, the Netherlands, cost-effective?**

**Author(s):** Urbanus, Anouk T; van Keep, Marjolijn; Matser, Amy A; Rozenbaum, Mark H; Weegink, Christine J; van den Hoek, Anneke; Prins, Maria; Postma, Maarten J

**Source:** PloS one; 2013; vol. 8 (no. 8); p. e70319

**Publication Date:** 2013

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 23950920

Available at [PloS one](#) - from Europe PubMed Central - Open Access

Available at [PloS one](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [PloS one](#) - from Unpaywall

**Abstract:**INTRODUCTIONHepatitis C virus (HCV) infection can lead to severe liver disease. Pregnant women are already routinely screened for several infectious diseases, but not yet for HCV infection. Here we examine whether adding HCV screening to routine screening is cost-effective.METHODSTo estimate the cost-effectiveness of implementing HCV screening of all pregnant women and HCV screening of first-generation non-Western pregnant women as compared to no screening, we developed a Markov model. For the parameters of the model, we used prevalence data from pregnant women retrospectively tested for HCV in Amsterdam, the Netherlands, and from literature sources. In addition, we estimated the effect of possible treatment improvement in the future.RESULTSThe incremental costs per woman screened was €41 and 0.0008 life-years were gained. The incremental cost-effectiveness ratio (ICER) was €52,473 which is above the cost-effectiveness threshold of €50,000. For screening first-generation non-Western migrants, the ICER was €47,113. Best-case analysis for both scenarios showed ICERs of respectively €19,505 and €17,533. We estimated that if costs per treatment were to decline to €3,750 (a reduction in price of €31,000), screening all pregnant women would be cost-effective.CONCLUSIONSCurrently, adding HCV screening to the already existing screening program for pregnant women is not cost-effective for women in general. However, adding HCV screening for first-generation non-Western women shows a modest cost-effective outcome. Yet, best case analysis shows potentials for an ICER below €20,000 per life-year gained. Treatment options will improve further in the coming years, enhancing cost-effectiveness even more.

**Database:** Medline

### **32. Screening for hepatitis C virus infection in adults: U.S. Preventive Services Task Force recommendation statement.**

**Author(s):** Moyer, Virginia A

**Source:** Annals of Internal Medicine; Sep 2013; vol. 159 (no. 5); p. 349-357

**Publication Date:** Sep 2013

**Publication Type(s):** Academic Journal

**PubMedID:** 23798026

Available at [Annals of Internal Medicine](#) - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection [location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

**Abstract:** Description: Update of the 2004 U.S. Preventive Services Task Force (USPSTF) recommendation on screening for and treatment of hepatitis C virus (HCV) infection in asymptomatic adults. Methods: The Agency for Healthcare Research and Quality commissioned 2 systematic reviews on screening for and treatment of HCV infection in asymptomatic adults, focusing on evidence gaps identified in the previous USPSTF recommendation and new studies published since 2004. The evidence on screening for HCV in pregnant women was also considered. Population: This recommendation applies to all asymptomatic adults without known liver disease or functional abnormalities. Recommendation: The USPSTF recommends screening for HCV infection in persons at high risk for infection. The USPSTF also recommends offering 1-time screening for HCV infection to adults born between 1945 and 1965. (B recommendation).

**Database:** CINAHL

### **33. Universal antenatal screening for hepatitis C.**

**Author(s):** Lambert, J; Jackson, V; Coulter-Smith, S; Brennan, M; Geary, M; Kelleher, T B; O'Reilly, M; Grundy, K; Sammon, N; Cafferkey, M

**Source:** Irish medical journal; May 2013; vol. 106 (no. 5); p. 136-139

**Publication Date:** May 2013

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 23914572

**Abstract:** The aims of this study were to pilot universal antenatal HCV screening and to determine the true seroprevalence of HCV infection in an unselected antenatal population. A risk assessment questionnaire for HCV infection was applied to all women booking for antenatal care over a 1-year period. In addition the prevalence of anti-HCV antibody positive serology in this population was determined. Over the course of the year, 9121 women booked for antenatal care at the Rotunda and 8976 women agreed to take part in the study, representing an uptake of 98.4%. 78 (0.9%) women were diagnosed as anti-HCV positive, the majority of whom were Irish (60.3%) or from Eastern Europe (24.4%). 73% of anti-HCV positive women reported one or more known risk factor with tattooing and a history of drug abuse the most commonly reported. 27% (n = 21) of anti-HCV positive women had no identifiable risk factors. Due to selective screening, seroprevalence of HCV is impossible to accurately calculate. However the universal screening applied here and the high uptake of testing has allowed the prevalence of anti-HCV among our antenatal population to be calculated at 0.9%. A significant proportion (27%) of anti-HCV positive women in this study reported no epidemiological risk factors at the time

**Database:** Medline



### **34. Evaluation of a universal vs a targeted hepatitis C virus screening strategy among pregnant women at the Vienna University Hospital.**

**Author(s):** Diab-Elschahawi, Magda; Dosch, Verena; Honsig, Claudia; Jatzko, Birgit; Segagni, Luigi; Assadian, Ojan; Presterl, Elisabeth

**Source:** American Journal of Infection Control; May 2013; vol. 41 (no. 5); p. 459-460

**Publication Date:** May 2013

**Publication Type(s):** Academic Journal

**Abstract:** A universal vs a targeted hepatitis C virus (HCV) screening policy for identifying pregnant women with the virus were compared. Universal screening did not yield significantly more identification of patients with HCV than targeted screening. However, 14 of 67 (21%) women with confirmed HCV would not have been detected by targeted risk-based HCV screening.

**Database:** CINAHL

### **35. Infection with hepatitis B and C virus in Europe: A systematic review of prevalence and cost-effectiveness of screening**

**Author(s):** Hahne S.J.M.; Veldhuijzen I.K.; Lim T.-A.; Salminen M.; Laar M.V.D.; Wiessing L.

**Source:** BMC Infectious Diseases; Apr 2013; vol. 13 (no. 1)

**Publication Date:** Apr 2013

**Publication Type(s):** Article

**PubMedID:** 23597411

Available at [BMC infectious diseases](#) - from BioMed Central

Available at [BMC infectious diseases](#) - from SpringerLink - Medicine

Available at [BMC infectious diseases](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [BMC infectious diseases](#) - from Unpaywall

**Abstract:** Background: Treatment for chronic hepatitis B virus (HBV) and hepatitis C virus (HCV) infection is improving but not benefiting individuals unaware to be infected. To inform screening policies we assessed (1) the hepatitis B surface antigen (HBsAg) and anti-hepatitis C virus antibody (anti-HCV-Ab) prevalence for 34 European countries; and (2) the cost-effectiveness of screening for chronic HBV and HCV infection. Methods: We searched peer-reviewed literature for data on HBsAg and anti-HCV-Ab prevalence and cost-effectiveness of screening of the general population and five subgroups, and used data for people who inject drugs (PWID) and blood donors from two European organizations. Of 1759 and 468 papers found in the prevalence and cost-effectiveness searches respectively, we included 124 and 29 papers after assessing their quality. We used decision rules to calculate weighted prevalence estimates by country. Results: The HBsAg and anti-HCV-Ab prevalence in the general population ranged from 0.1%-5.6% and 0.4%-5.2% respectively, by country. For PWID, men who have sex with men and migrants, the prevalence of HBsAg and anti-HCV-Ab was higher than the prevalence in the general population in all but 3 countries. There is evidence that HCV screening of PWID and HBsAg screening of pregnant women and migrants is cost-effective. Conclusion: The prevalence of chronic HBV and HCV infection varies widely between European countries. Anti-HCV-Ab screening of PWID and HBsAg screening of pregnant women and migrants have European public health priority. Cost-effectiveness analyses may need to take effect of antiviral treatment on preventing HBV and HCV transmission into account. © 2013 Hahne et al.; licensee BioMed Central Ltd.

**Database:** EMBASE



### **36. Hepatitis C Virus in Pregnancy.**

**Author(s):** Prasad, Mona R.; Honegger, Jonathan R.

**Source:** American Journal of Perinatology; Feb 2013; vol. 30 (no. 2); p. 149-159

**Publication Date:** Feb 2013

**Publication Type(s):** Academic Journal

**PubMedID:** 23389935

Available at [American Journal of Perinatology](#) - from Unpaywall

**Abstract:** Despite recent advances in the pathogenesis, treatment, and public health response to hepatitis C virus (HCV), HCV as it specifically relates to pregnancy has been a neglected condition. HCV-monoinfected pregnant women have a 2-8% risk of viral transmission to their infant, but the mechanism and timing of mother to child transmission (MTCT) are not fully understood, nor is the natural history of the illness in pregnant women and their offspring. Recognition of HCV-infected pregnant women is relevant because of the long-term health implications for the mother, potential adverse effects of infection on pregnancy outcomes, and the possibility of transmission to their infants. Certain risk factors for MTCT of HCV appear similar to those for human immunodeficiency virus (HIV); however, unlike HIV, effective methods for prevention of HCV vertical transmission have not been developed. It is possible that a better understanding of HCV MTCT and pathogenesis in pregnancy will guide development of useful prevention strategies, particularly as we enter an era where interferon-free drug cocktails may emerge as viable treatment options for HCV.

**Database:** CINAHL

### **37. Screening for infectious diseases during pregnancy: Which test and which situation**

**Author(s):** Mussi-Pinhata M.M.; Quintana S.M.

**Source:** Current Women's Health Reviews; May 2012; vol. 8 (no. 2); p. 158-171

**Publication Date:** May 2012

**Publication Type(s):** Review

Available at [Current Women's Health Reviews](#) - from IngentaConnect - Open Access

**Abstract:** The purpose of this article is to review the current knowledge, and recommendations for screening infectious diseases during pregnancy to improve maternal, fetal and newborn health. We examined studies and public health policies published in English language to identify which tests and in which situations recommendations are being made. Universal prenatal screening with at least one test for syphilis, human immunodeficiency virus, and asymptomatic bacteriuria is largely recommended. Approaches for maternal screening for preventing perinatal transmission of the Hepatitis B virus are not uniform and early vaccination of newborns irrespective of maternal screening is frequently adopted in resource-limited countries. Screening for maternal Hepatitis C infection can be considered for high-risk women. Routine screening for Cytomegalovirus is not usually recommended by public health authorities but is being debated among experts. Universal screening for Group B Streptococcus at 35-37 weeks gestation is the preferred approach for preventing neonatal disease. Selective early gestation Chlamydia trachomatis and Neisseria gonorrhea screening of pregnant women based on risk factors is performed in developed countries. Although prenatal testing for Toxoplasma gondii is routinely offered in some countries, no consensus exists about the benefits, diagnostic tests or the most effective screening strategy to prevent congenital toxoplasmosis. © 2012 Bentham Science Publishers.

**Database:** EMBASE

### **38. Hepatitis C infection among pregnant women in British Columbia: reported prevalence and critical appraisal of current prenatal screening methods.**

**Author(s):** Blasig, Audrey; Wagner, Emily C; Pi, David; Bigham, Mark; Remple, Valencia P; Craib, Kevin J P; Doyle, Patrick; Dobson, Simon; Yoshida, Eric M; Patrick, David; Krajden, Mel; Money, Deborah M; BC HCV Vertical Transmission Study Group

**Source:** Canadian journal of public health = Revue canadienne de sante publique; 2011; vol. 102 (no. 2); p. 98-102

**Publication Date:** 2011

**Publication Type(s):** Journal Article

**PubMedID:** 21608379

Available at [Canadian journal of public health = Revue canadienne de sante publique](#) - from SpringerLink - Medicine

Available at [Canadian journal of public health = Revue canadienne de sante publique](#) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:**BACKGROUND Despite the fact that hepatitis C virus (HCV) is a relatively common infection in Canada, particularly in British Columbia (BC), there is a paucity of information on actual HCV prevalence in pregnant women. At present, pregnant women are only screened if they fit risk criteria, which may result in under-identification of HCV in this population. The purpose of this study was to determine the overall prevalence rate, age and geographic distribution of reported HCV infection among pregnant women in BC, and compare results to a previously conducted anonymous seroprevalence survey. METHODS Reported HCV prevalence was determined through a confidential database linkage of all prenatal screening results at the Canadian Blood Services (CBS) with all HCV test results at the Provincial Laboratory, from May 2000 to Oct 2002. Data were stratified by age group and geographic location, and subsequently compared to an anonymous prenatal seroprevalence survey conducted in 1994. RESULTS The overall HCV prevalence rate was 50.3/10,000 (95% CI 46.3-54.6), or 0.5% of the cohort. Prevalence was highest in the northern BC region (66.2/10,000, 95% CI 51.4-85.3) and lowest in the populous suburban region southwest of Vancouver (38.0/10,000, 95% CI 32.3-44.8). Of note, the rate of reported HCV among pregnant women was significantly lower than the anonymous seroprevalence rate: 50.3/10,000 vs. 91.3/10,000 ( $p < 0.0001$ ). CONCLUSION Rates of reported HCV among pregnant women were approximately 50% lower than the rates determined by the anonymous seroprevalence survey. Further research is needed to determine the relative merits of the current selective screening policy versus universal prenatal HCV screening in pregnancy.

**Database:** Medline

### **39. Hepatitis C: is there a case for universal screening in pregnancy?**

**Author(s):** Martyn, F; Phelan, O; O'Connell, M

**Source:** Irish medical journal; May 2011; vol. 104 (no. 5); p. 144-146

**Publication Date:** May 2011

**Publication Type(s):** Journal Article

**PubMedID:** 21736090

**Abstract:**Hepatitis C (HCV) is not routinely screened for antenatally in all maternity hospitals. Most hospitals adopt a policy of targeted screening. The policy in the Coombe Women and Infants University Hospital in Dublin changed from targeted screening in 2006 to universal screening in 2007. We audited the two consecutive years. The prevalence of HCV in our antenatal population was 1.4% for 2006 (67/4666) when targeted screening applied and in 2007--0.71% (66/9222) when universal screening came into affect. One woman in 2007 would not have been detected by targeted screening--1.49% (1/67). Fifty five percent (37/67) of women were HCV-RNA positive in 2006 and 57.5% (38/66) were positive in 2007. We conclude that there were similar detection rates for HCV in 2006 and 2007 and that universal screening is not required if inclusive criteria for selective screening are employed but is of use in research context.

**Database:** Medline

### **40. The management of HCV-infected pregnant women.**

**Author(s):** Valladares, Guillermo; Chacaltana, Alfonso; Sjogren, Maria H

**Source:** Annals of hepatology; 2010; vol. 9

**Publication Date:** 2010

**Publication Type(s):** Journal Article

**PubMedID:** 20714003

**Abstract:**Hepatitis C is, at present, a worldwide health problem and is the most common cause of liver transplantation. Its prevalence in pregnant women is similar to that of the general population. In the absence of cirrhosis and portal hypertension, most HCV-infected pregnant women do not have obstetric complications. Screening of pregnant women that are asymptomatic and do not have risk factors is not cost effective. A high hepatitis C viral load reportedly increases vertical transmission and is higher in women who are coinfectd with HIV or who are intravenous drug users. Prolonged rupture of the membrane for more than 6 h, amniocentesis, and perineal lacerations increase the potential risk of perinatal transmission. Although the hepatitis C virus can be transmitted intrapartum, prevention by caesarean delivery is not generally indicated. The HCV virus can be found in maternal milk; however, breast feeding is not contraindicated. In conclusion, there are no antiviral treatment recommendations for HCV-infected women during pregnancy, or guidelines for the prevention of vertical transmission.

**Database:** Medline

#### **41. The effectiveness of screening for hepatitis C in pregnancy.**

**Author(s):** McDermott, Colleen D; Moravac, Catherine C; Yudin, Mark H

**Source:** Journal of obstetrics and gynaecology Canada : JOGC = Journal d'obstetrique et gynecologie du Canada : JOGC; Nov 2010; vol. 32 (no. 11); p. 1035-1041

**Publication Date:** Nov 2010

**Publication Type(s):** Research Support, Non-u.s. Gov't Comparative Study Journal Article

**PubMedID:** 21176314

**Abstract:**OBJECTIVEto determine the effectiveness of universal versus targeted screening for hepatitis C (HCV) during pregnancy at an urban health care centre.METHODSwe conducted a cross-sectional study of 653 pregnant women. Patients completed a demographic and standardized questionnaire identifying known risk factors for HCV. Patients then underwent blood testing for HCV antibodies. The effectiveness of screening based on risk factors was determined by comparing the number of women who screened positive for HCV risk factors with those who tested seropositive.RESULTSof those who entered the study, 0.5% (3/645) tested positive for HCV. HCV risk factor screening showed that 72% answered "Yes" to one or more risk factors and 28% answered "No" to all risk factors. Answering "Yes" to any risk factor was not associated with testing positive for HCV antibodies ( $P > 0.05$ ). Screening positive for a high severity risk factor (exposure to intravenous drug use or to the blood of an HCV-positive individual) was associated with testing positive for HCV antibodies ( $P = 0.002$ ), but screening positive for a moderate or low severity risk factor was not ( $P > 0.05$ ).CONCLUSIONduring pregnancy, universal testing for HCV and testing based on the presence of any risk factors for HCV is not recommended. HCV testing based on the presence of high severity risk factors, however, may be warranted.

**Database:** Medline

#### **42. Caring for pregnant women and newborns with hepatitis B or C.**

**Author(s):** Lam NC; Gotsch PB; Langan RC

**Source:** American Family Physician; Nov 2010; vol. 82 (no. 10); p. 1225-1229

**Publication Date:** Nov 2010

**Publication Type(s):** Academic Journal

**PubMedID:** 21121533

Available at [American Family Physician](#) - from Free Medical Journals . com

**Abstract:**Family physicians encounter diagnostic and treatment issues when caring for pregnant women with hepatitis B or C and their newborns. When hepatitis B virus is perinatally acquired, an infant has approximately a 90 percent chance of becoming a chronic carrier and, when chronically infected, has a 15 to 25 percent risk of dying in adulthood from cirrhosis or liver cancer. However, early identification and prophylaxis is 85 to 95 percent effective in reducing the acquisition of perinatal infection. Communication among members of the health care team is important to ensure proper preventive techniques are implemented, and standing hospital orders for hepatitis B testing and prophylaxis can reduce missed opportunities for prevention. All pregnant women should be screened for hepatitis B as part of their routine prenatal evaluation; those with ongoing risk factors should be evaluated again when in labor. Infants of mothers who are positive for hepatitis B surface antigen should receive hepatitis B immune globulin and hepatitis B vaccination within 12 hours of birth, and other infants should receive hepatitis B vaccination before hospital discharge. There are no effective measures for preventing perinatal hepatitis C transmission, but transmission rates are less than 10 percent. Perinatally acquired hepatitis C can be diagnosed by detecting hepatitis C virus

RNA on two separate occasions between two and six months of age, or by detecting hepatitis C virus antibodies after 15 months of age.

**Database:** CINAHL

#### **43. Viral hepatitis and pregnancy**

**Author(s):** Floreani A.

**Source:** Current Women's Health Reviews; 2009; vol. 5 (no. 1); p. 8-13

**Publication Date:** 2009

**Publication Type(s):** Review

**Abstract:** An acute hepatitis can have an onset during any trimester; it does not represent a risk for malformation in the baby, nor for the mother (with very rare exceptions). In fact, only hepatitis E virus poses a significantly increased risk to pregnant women. The most common scenario is a pregnancy in a woman chronically infected with a hepatotropic virus. As far as the HBV is concerned, the majority of published studies reported no association with adverse pregnancy outcomes in HBsAg positive carriers. During pregnancy in chronic HCV infection a significant reduction in mean ALT levels has been reported, with a rebound during the post-partum period. In very few cases exacerbation of chronic hepatitis C has been reported in pregnancy. A co-factor which might play a role in the reduction of liver damage is the release of the endogenous IFN from the placenta. Observations regarding serum HCV-RNA concentration have been variable. In some women HCV-RNA levels rise toward the end of pregnancy. In general, pregnancy does not have a negative effect on either HBV or HCV infection. Conversely, chronic hepatitis does not appear to have an adverse effect on the course of pregnancy, or the birth weight of the newborn infant. The role of spontaneous abortion is approximately the same as in the general population. The overall rate of mother-to-child transmission for HCV is 1.7% if the mother is known to be anti-HCV positive only. If the mother is known to be viraemic, that is HCV-RNA-positive, the rate is 4.3%. Co-infection with HIV increases the rate of mother-to-child transmission up to 19.4%. Numerous risk factors for vertical transmission have been studied. In general, high viral load defined as at least  $2.5 \times 10^6$  viral RNA copies/ml, HIV coinfection and invasive procedures are the most important factors. Both Interferon and Ribavirin are contraindicated during pregnancy. Viral clearance prior to pregnancy would increase the likelihood that a woman remains non-viraemic in pregnancy with a consequent reduced risk of vertical transmission. © 2009 Bentham Science Publishers Ltd.

**Database:** EMBASE

#### **44. Screening for hepatitis C virus infection in methadone-maintained mothers and their infants.**

**Author(s):** Liu AJ; An EI; Murray HG; Tetstall E; Leroi MJ; Nanan RK

**Source:** Medical Journal of Australia; Nov 2009; vol. 191 (no. 10); p. 535-538

**Publication Date:** Nov 2009

**Publication Type(s):** Academic Journal

**PubMedID:** 19912084

Available at [Medical Journal of Australia](#) - from Wiley Online Library Science , Technology and Medicine Collection 2019

**Database:** CINAHL

#### **45. Hepatitis B and C: value of universal antenatal screening.**

**Author(s):** Sheikh, Saba Munib

**Source:** Journal of the College of Physicians and Surgeons--Pakistan : JCPSP; Mar 2009; vol. 19 (no. 3); p. 179-182

**Publication Date:** Mar 2009

**Publication Type(s):** Journal Article

**PubMedID:** 19268019

**Abstract:**OBJECTIVETo determine the positive yield of universal antenatal screening of hepatitis B and C and its association with known risk factors.STUDY DESIGNCross-sectional, analytical study.PLACE AND DURATION OF STUDYThe study was conducted from January to December 2006 at Zainab Panjwani Memorial Hospital, Karachi.METHODOLOGYAll pregnant women were screened for hepatitis B surface antigen (HBsAg) and hepatitis C virus (HCV) antibodies during antenatal period irrespective of the presence of known risk factors. Carriers i.e. women whose HBV or HCV infection positive status was already laboratory confirmed on first antenatal visit were excluded. Screening was performed by Acu-check one strip test (chromatographic immunoassay) in serum. Women screened positive were interviewed, a questionnaire was filled inquiring about the history of any risk factors predisposing to these infections. Frequency of positive cases was determined in those with risk factors and those without. The proportion was compared using Chi-square test.RESULTSO f the 2592 pregnant women screened during the study period, 09 (0.34%) were HBsAg positive and 18 (0.69%) were HCV antibodies positive. None was found to be a carrier of both viruses. There were 1004 primigravidas, who had no recallable risk factor, and of those, 02 (0.19%) and 09 (0.89%) were HBV and HCV carriers respectively. No significant association of risk factors was seen in both HBV ( $p=0.310$ ) and HCV ( $p=0.328$ ).CONCLUSIONThere was no significant association of risk factors with HBV and HCV infection, thus necessitating the need of universal antenatal screening. However, large scale epidemiological/multicentric studies are required to determine the cost-effectiveness of the screening and prevention of vertical transmission.

**Database:** Medline

#### **46. Chronic hepatitis C in pregnancy.**

**Author(s):** Berkley, Eliza M F; Leslie, Kimberly K; Arora, Sanjeev; Qualls, Clifford; Dunkelberg, Jeffrey C

**Source:** Obstetrics and gynecology; Aug 2008; vol. 112 (no. 2); p. 304-310

**Publication Date:** Aug 2008

**Publication Type(s):** Journal Article

**PubMedID:** 18669727

Available at [Obstetrics and gynecology](#) - from Ovid (LWW Total Access Collection 2019 - with Neurology)

**Abstract:**OBJECTIVETo estimate outcomes, to determine whether appropriate follow-up was performed for pregnant patients with hepatitis C virus (HCV), and to show that maternal and neonatal complications would be higher in the HCV-positive group.METHODSWe compared pregnant women from a drug dependence and treatment program who were HCV antibody-positive with those who were HCV antibody-negative using the University of New Mexico Perinatal Database. Maternal and neonatal outcomes were evaluated, including cholestasis of pregnancy, preterm birth, low birth weight, neonatal intensive care unit admissions, and neonatal methadone withdrawal. Variables were compared using Student t, Fisher exact, and chi(2) tests.RESULTSAmong 351 pregnancies between January 2000 and 2006, 159 (53%) were HCV antibody reactive, 141 (47%) tested nonreactive, and 51 (15%) were not screened. Hepatitis C reactivity was more common among Hispanics. Cholestasis of pregnancy was increased in HCV antibody reactive (Ab+) pregnancies (10 of 159, 6.3% compared with 0 of 141, P=.002). Among women taking methadone, there was a significantly higher incidence of neonatal withdrawal (P=.001). This was significant in mothers on low (0-30 mg) and moderate (31-90 mg) methadone doses. Despite the high cure rate with intensive therapy, only 5.7% of HCV Ab+ mothers and 1.9% of their neonates received gastroenterology referrals.CONCLUSIONIn pregnant women involved in this drug treatment program, HCV reactivity was associated with Hispanic ethnicity, cholestasis of pregnancy, and increased neonatal methadone withdrawal regardless of maternal methadone dose. Gastroenterology consultation was inadequate.

**Database:** Medline

#### **47. Hepatitis C in pregnancy.**

**Author(s):** Jain, Sangeeta; Goharkhay, Nima; Saade, George; Hankins, Gary D; Anderson, Garland D

**Source:** American journal of perinatology; Apr 2007; vol. 24 (no. 4); p. 251-256

**Publication Date:** Apr 2007

**Publication Type(s):** Journal Article

**PubMedID:** 17447189

**Abstract:**Hepatitis C is the most common cause of chronic liver disease and liver transplantation, with 25,000 cases reported in the United States per year. By blood product screening, transfusion-related viral transmission has been virtually eliminated, and maternal fetal transmission is now one of the most important modes of transmission. Hepatitis C virus (HCV) infection is blood borne but only 25% of the infected pregnant women indicate a history of blood products transfusion or intravenous drug use. HCV transmission is 2- to 4-fold higher in women coinfecting with HIV. Although cesarean delivery has not been shown to decrease perinatal transmission, it may have benefits in women with viremia at the time of delivery. During pregnancy, treatment of HCV is contraindicated, even though perinatal transmission is associated with a higher incidence of chronic liver disease. This review gives an update on the disease agent, risk factors, modes of transmission, diagnosis, treatment modalities, and perinatal issues that require further evaluation.

**Database:** Medline

#### **48. Antenatal screening for hepatitis B and C virus carrier state at a University Hospital**

**Author(s):** Yousfani S.; Mumtaz F.; Memon A.; Sikandar R.; Memon M.A.

**Source:** Journal of the Liaquat University of Medical and Health Sciences; 2006; vol. 5 (no. 1); p. 24-27

**Publication Date:** 2006

**Publication Type(s):** Article

Available at [Journal of the Liaquat University of Medical and Health Sciences](#) - from Unpaywall

**Abstract:**OBJECTIVE: To determine hepatitis B virus (HBV) and hepatitis C virus (HCV) carrier state among pregnant women at gynaecology and obstetrics department of Liaquat University Hospital, Hyderabad -Sindh. DESIGN: A descriptive study. SETTING: Maternity units of Liaquat University Hospital, Hyderabad - Sindh from January 2003 to December 2003. METHODS: One hundred and three pregnant women with 35 to 40 weeks of pregnancy admitted in maternity units due to obstetrical reasons were screened for hepatitis B and C seropositivity after they gave informed consent. Immuno- chromatography and ELISA technique were used for blood testing. Pregnant women with symptomatic liver disease were excluded from the study. Convenient sampling approach was adopted for the data collection. RESULTS: Among screened population, 29.1% of pregnant women were found positive for HBV or HCV. Out of these, 16.5% women were positive for HCV where as 12.6% for HBV. All women had history of injections and ear and nose prick where as 20% had positive history of blood transfusions, followed by history of jaundice among them or with their partner. CONCLUSION: In our set up, frequency of 29.1% sero-positivity for HBV and HCV among pregnant women is alarming. These sero-positive mothers are not only at risk of having cirrhosis and liver cancer later on, but also are a continuous threat to their offsprings and care providers. Hence, there is a dire need to conduct more epidemiological studies on this problem and take measures for prevention and control of the disease.

**Database:** EMBASE



#### **49. Hepatitis C and pregnancy.**

**Author(s):** Airoldi, James; Berghella, Vincenzo

**Source:** Obstetrical & gynecological survey; Oct 2006; vol. 61 (no. 10); p. 666-672

**Publication Date:** Oct 2006

**Publication Type(s):** Journal Article Review

**PubMedID:** 16978426

Available at [Obstetrical & gynecological survey](#) - from Ovid (LWW Total Access Collection 2019 - with Neurology)

**Abstract:**UNLABELLEDHepatitis C is the most common chronic bloodborne infection in the United States. The diagnosis of vertical transmission is reliably established by a positive serum hepatitis C virus (HCV) RNA on 2 occasions 3 to 4 months apart after the infant is at least 2 months old and/or by the detection of anti-HCV antibodies after the infant is 18 months old. Vertical transmission in HCV RNA-negative pregnant women is approximately 1% to 3% versus approximately 4% to 6% in HCV RNA-positive women. From the standpoint of vertical transmission, no critical HCV RNA titer has been established. Coinfection with HIV has been shown to increase the risk of vertical transmission of HCV, but highly active antiretroviral therapy may decrease the risk significantly. In HIV-negative women, route of delivery does not influence vertical transmission. In HCV/HIV-coinfected women, decisions regarding mode of delivery should be based on HIV status. There is no association between vertical transmission of HCV and gestational age at delivery or the presence of chorioamnionitis. The use of a scalp electrode has been associated with vertical transmission and this practice is discouraged. Data are conflicting regarding duration of ruptured membranes and the risk of vertical transmission of hepatitis C. When the duration of membrane rupture exceeds 6 hours, the risk may be increased. There is no evidence demonstrating an increased risk of HCV transmission in HIV-negative women who breast feed. In HCV/HIV-coinfected women, breast feeding is discouraged in women who have consistent access to safe infant formula.TARGET AUDIENCEObstetricians & Gynecologists, Family Physicians.LEARNING OBJECTIVESAfter completion of this article, the reader should be able to recall that vertical transmission of hepatitis C (HCV) does occur, state that coinfection with HIV increases the transmission rate, and summarize that there is no association between gestational age or presence of chorioamnionitis and no evidence that a cesarean delivery prevents transmission.

**Database:** Medline

**50. The management of HCV infected pregnant women and their children European paediatric HCV network.**

**Author(s):** Pembrey, Lucy; Newell, Marie-Louise; Tovo, Pier-Angelo; EPHN Collaborators

**Source:** Journal of hepatology; Sep 2005; vol. 43 (no. 3); p. 515-525

**Publication Date:** Sep 2005

**Publication Type(s):** Research Support, Non-u.s. Gov't Multicenter Study Journal Article

**PubMedID:** 16144064

**Abstract:**BACKGROUND/AIMSAs evidence accumulates relating to mother-to-child (vertical) transmission of hepatitis C virus (HCV), it is timely to draw up guidelines for the clinical management of HCV infected pregnant women and their children.METHODSA review of evidence from the European Paediatric HCV Network (EPHN) prospective study of HCV infected women and their children and other published studies. Meeting of EPHN clinical experts to reach a consensus on recommendations for management. Each recommendation was graded according to the level of evidence.RESULTS/CONCLUSIONSAlthough several risk factors for mother-to-child transmission have been identified, none are modifiable and there are currently no interventions available to prevent vertical transmission of HCV. Data on timing of loss of maternal antibodies and reliability of diagnostic tests inform the optimum follow-up schedule for confirmation or exclusion of infection in children born to HCV infected women. Based on the current evidence, routine antenatal screening for HCV should not be introduced and neither elective caesarean section nor avoidance of breastfeeding should be recommended to HCV infected women to prevent mother-to-child transmission of HCV. HCV/HIV co-infected women should follow existing HIV guidelines.

**Database:** Medline

**51. Routine hepatitis C virus screening in pregnancy: a cost-effectiveness analysis.**

**Author(s):** Plunkett BA; Grobman WA

**Source:** American Journal of Obstetrics & Gynecology; Apr 2005; vol. 192 (no. 4); p. 1153-1161

**Publication Date:** Apr 2005

**Publication Type(s):** Academic Journal

**PubMedID:** 15846195

**Abstract:**OBJECTIVE: The purpose of this study was to determine whether routine hepatitis C virus screening in pregnancy is cost-effective. STUDY DESIGN: A decision tree with Markov analysis was developed to compare 3 approaches to asymptomatic hepatitis C virus infection in low-risk pregnant women: (1) no hepatitis C virus screening, (2) hepatitis C virus screening and subsequent treatment for progressive disease, and (3) hepatitis C virus screening, subsequent treatment for progressive disease, and elective cesarean delivery to avert perinatal transmission. Lifetime costs and quality-adjusted life years were evaluated for mother and child. RESULTS: In our base case, hepatitis C virus screening and subsequent treatment of progressive disease was dominated (more costly and less effective) by no screening, with an incremental cost of 108 US dollars and a decreased incremental effectiveness of 0.00011 quality-adjusted life years. When compared with no screening, the marginal cost and effectiveness of screening, treatment, and cesarean delivery was 117 US dollars and 0.00010 quality-adjusted life years, respectively, which yields a cost-effectiveness ratio of 1,170,000 US dollars per quality-adjusted life year. CONCLUSION: The screening of asymptomatic pregnant women for hepatitis C virus infection is not cost-effective.

**Database:** CINAHL

**52. A retrospective study of the management of HIV, hepatitis B and hepatitis C-positive pregnancies in Edinburgh, UK from 1997-2002**

**Author(s):** Russell W.J.

**Source:** McGill Journal of Medicine; 2004; vol. 7 (no. 2); p. 135-142

**Publication Date:** 2004

**Publication Type(s):** Article

**Abstract:**STUDY AIMS: This study aims to examine management practices for HIV-positive, HBV-positive and HCV-positive pregnancies over 1997-2002 in Edinburgh, UK, and the effects the diseases have on pregnancy outcomes. RESULTS: Equally for HIV, HBV, and HCV, 50% of the diagnoses were made before pregnancy while the other 50% were detected and diagnosed through antenatal testing. Of the 17 HBV-positive pregnancies 31.6% of the women were highly infectious at delivery and 57.9% were carriers with low infectivity. Of the 17 HIV-positive pregnancies 47.1% of the women had an undetectable viral load and 17.6% were unrecorded at delivery. All 17 HIV-positive pregnancies received ART in varying regimes, 15 (88.2%) were on combination therapy, one delivered vaginally and no women breastfed. All neonates of HBV-positive mothers received immunoglobulin and vaccination and were then breastfed. There were no specific interventions for HCV. Only one study child out of the 38 pregnancies became infected, and this was with HIV. CONCLUSION: Routine screening identifies women with no obvious risk factors, and interventions are largely accepted and effective at reducing vertical transmission. HIV therapy is individually tailored and increasingly uses several agents. Moreover, there is a movement towards allowing low viral load HIV-positive women to deliver vaginally. There are no interventions recommended for HCV infectivity alone. The difficulty collecting information illustrates that no adequate tracking system of infected pregnant women exists. Recommended is the creation of a formal database that includes standardized information such as the viral load of HIV or HCV at delivery, so that outcomes of intrapartum management can be more effectively assessed. No comment can be made on virus-related pregnancy complications, as study numbers are too small for statistically valid data.

**Database:** EMBASE

**53. Hepatitis C virus among childbearing women in Scotland: prevalence, deprivation, and diagnosis.**

**Author(s):** Hutchinson, S J; Goldberg, D J; King, M; Cameron, S O; Shaw, L E; Brown, A; MacKenzie, J; Wilson, K; MacDonald, L

**Source:** Gut; Apr 2004; vol. 53 (no. 4); p. 593-598

**Publication Date:** Apr 2004

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 15016757

Available at [Gut](#) - from BMJ Journals - NHS

Available at [Gut](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [Gut](#) - from PubMed Central

**Abstract:**OBJECTIVES(A) To examine the prevalence and demographic characteristics of hepatitis C virus (HCV) infection among childbearing women in Scotland; and (B) to determine the extent of maternal HCV infection diagnosed prior to birth.METHODS(A) Residual dried blood spot samples from routine neonatal screening, collected throughout Scotland during March-October 2000, were unlinked from identifiers and tested anonymously for HCV antibodies; and (B) electronic record linkage of Scotland's databases of births and diagnosed HCV infections was performed.RESULTS(A) Of 30,259 samples, 121 were enzyme linked immunosorbent assay repeat reactive and 88 of these

were confirmed as anti-HCV positive in the recombinant immunoblot assay, representing a seroprevalence of 0.29-0.40%. HCV seroprevalence was high among 25-29 year olds (0.4-0.57%), in high deprivation areas (0.92-1.07%), and in Greater Glasgow (0.83-0.96%) and Grampian (0.38-0.62%). Adjusted relative risk for HCV infection was highest among residents in high deprivation areas of Glasgow (7.2 (95% confidence interval 2.0-25.5)). (B) Of 121 HCV infections found among women at delivery, 24% and 46% were estimated to have been diagnosed prior to pregnancy and birth, respectively. CONCLUSIONS HCV prevalence among Scottish childbearing women is consistent with that expected from injecting drug use. Based on reported rates of mother to child transmission, 8-11 paediatric infections are expected per annum. Diagnosis in only 24% of infected women prior to pregnancy indicates the extent to which HCV goes unrecognised in the injecting community. The current HCV screening approach-to test only those with a history of injecting drug use (or other risk factors for infection)-identifies approximately a quarter of previously undetected infections among pregnant women.

**Database:** Medline

#### **54. Screening and counseling practices reported by obstetrician-gynecologists for patients with hepatitis C virus infection.**

**Author(s):** Boaz, Kathy; Fiore, Anthony E; Schrag, Stephanie J; Gonik, Bernard; Schulkin, Jay

**Source:** Infectious diseases in obstetrics and gynecology; 2003; vol. 11 (no. 1); p. 39-44

**Publication Date:** 2003

**Publication Type(s):** Comparative Study Journal Article Research Support, U.s. Gov't, P.h.s.

**PubMedID:** 12839631

Available at [Infectious diseases in obstetrics and gynecology](#) - from Europe PubMed Central - Open Access

Available at [Infectious diseases in obstetrics and gynecology](#) - from PubMed Central

Available at [Infectious diseases in obstetrics and gynecology](#) - from Unpaywall

**Abstract:** BACKGROUND Obstetrician-gynecologists are important providers of primary health care to women, and the hepatitis C virus (HCV) infection screening practices and recommendations provided by obstetrician-gynecologists for HCV-infected patients are unknown. METHODS We surveyed American College of Obstetricians and Gynecologists (ACOG) Fellows, including 413 Fellows who were participating in the Collaborative Ambulatory Research Network (CARN) and 650 randomly sampled Fellows, about HCV screening and counseling practices. RESULTS In total, 74% of CARN members and 44% of non-CARN members responded. Demographics and practice structure were similar between the two groups. More than 80% of providers routinely collected drug use and blood transfusion histories from their patients. Of the respondents, 49% always screened for HCV infection when patients had a history of injection drug use, and 35% screened all patients who had received a blood transfusion before 1992. For HCV-infected patients, 47% of the physicians always advised against breastfeeding, 70% recommended condom use with a long-term steady partner, and 64% advised against alcohol consumption. Respondents who considered themselves to be primary care providers were no more likely to screen or provide appropriate counseling messages than were other providers. CONCLUSIONS Most obstetrician-gynecologists are routinely collecting information that can be used to assess HCV infection risk, but HCV screening practices and counseling that are provided for those with HCV infection are not always consistent with current Centers for Disease Control and Prevention and ACOG recommendations.

**Database:** Medline

**55. Is there a case for hepatitis C infection screening in the antenatal period?**

**Author(s):** Pembrey L; Newell M; Peckham C

**Source:** Journal of Medical Screening; Dec 2003; vol. 10 (no. 4); p. 161-168

**Publication Date:** Dec 2003

**Publication Type(s):** Academic Journal

**PubMedID:** 14738651

Available at [Journal of Medical Screening](#) - from Free Medical Journals . com

Available at [Journal of Medical Screening](#) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:**Based on research evidence the UK National Screening Committee recently recommended that routine antenatal screening for hepatitis C virus (HCV) infection should not be introduced into the UK antenatal screening programme. In this paper we review the evidence on which this decision was based, addressing the criteria that need to be considered before the introduction of a new screening programme.

**Database:** CINAHL

**56. Hepatitis C and pregnancy: an update.**

**Author(s):** Giles, Michelle; Hellard, Margaret; Sasadeusz, Joe

**Source:** The Australian & New Zealand journal of obstetrics & gynaecology; Aug 2003; vol. 43 (no. 4); p. 290-293

**Publication Date:** Aug 2003

**Publication Type(s):** Journal Article Review

**PubMedID:** 14714713

Available at [The Australian & New Zealand journal of obstetrics & gynaecology](#) - from Wiley Online Library

**Abstract:**Hepatitis C is a slowly progressive disease with significant long-term sequelae including cirrhosis, liver failure and hepatocellular carcinoma. Many women of childbearing years are infected with this virus and are at risk of transmitting it to their offspring. Despite this, there are many unanswered questions about hepatitis C and pregnancy including who to screen, the risk factors associated with infection, how these women should be managed during pregnancy and the options available to them after delivery.

**Database:** Medline

### **57. Hepatitis C in pregnancy - To screen or not to screen?**

**Author(s):** Grant J.M.

**Source:** British Journal of Obstetrics and Gynaecology; 2001; vol. 108 (no. 4)

**Publication Date:** 2001

**Publication Type(s):** Editorial

Available at [British Journal of Obstetrics and Gynaecology](#) - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection  
[location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

**Database:** EMBASE

### **58. Clinical course of pregnant women with chronic hepatitis C virus infection and risk of mother-to-child hepatitis C virus transmission**

**Author(s):** Conte D.; Colucci A.; Minola E.; Fraquelli M.; Prati D.

**Source:** Digestive and Liver Disease; 2001; vol. 33 (no. 4); p. 366-371

**Publication Date:** 2001

**Publication Type(s):** Review

**PubMedID:** 11432518

**Abstract:**As far as concerns chronic hepatitis C virus infection in pregnant women, different points remain to be elucidated, such as the clinical course, the rate of mother-to-child hepatitis C virus transmission and, in particular, its route and the possible risk factors. This review aimed to analyse current data on the prevalence of chronic hepatitis C virus infection in pregnant women and its relationship with risk factors, the rate of mother-to-child hepatitis C virus transmission and the factors possibly involved, particularly the maternal hepatitis C virus viral load and the human immunodeficiency virus coinfection, and the type of delivery and feeding. Finally, the appropriate timing for HCV-RNA testing in newborns has been reviewed.

**Database:** EMBASE

### **59. Hepatitis C in pregnancy**

**Author(s):** Dinsmoor M.J.

**Source:** Current women's health reports; Aug 2001; vol. 1 (no. 1); p. 27-30

**Publication Date:** Aug 2001

**Publication Type(s):** Review

**PubMedID:** 12112948

**Abstract:**In epidemiologic studies done primarily in Europe and in the United States, antibody to hepatitis C has been present in approximately 1% to 4% of pregnant women. Although close to 50% of infected women have no known risk factors for infection, routine screening of pregnant women is not currently recommended. Hepatitis C virus (HCV) may be transmitted to the newborn at a rate of approximately 5%; it is not clear whether this occurs in utero, intrapartum, or both. Factors that increase the risk of vertical transmission include concomitant HIV infection and a high maternal HCV viral load. Breast feeding does not appear to significantly increase the risk of neonatal HCV infection. There is currently no treatment for HCV infection that is approved for use in pregnancy or for use in the neonate.

**Database:** EMBASE

**60. Hepatitis C virus among high and low risk pregnant women in Dundee: unlinked anonymous testing.**

**Author(s):** Goldberg, D; McIntyre, P G; Smith, R; Appleyard, K; Dunlop, J; Taylor, A; Hutchinson, S

**Source:** BJOG : an international journal of obstetrics and gynaecology; Apr 2001; vol. 108 (no. 4); p. 365-370

**Publication Date:** Apr 2001

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 11305542

Available at [BJOG : an international journal of obstetrics and gynaecology](#) - from Wiley Online Library

**Abstract:**OBJECTIVETo determine the prevalence of the hepatitis C virus among pregnant women, to gauge the non-injecting, particularly sexual, risk of them being hepatitis C virus infected and to assess the potential impact of selective antenatal screening.POPULATIONAntenatal clinic attenders and women undergoing termination of pregnancy in 1997.SETTINGNinewells Hospital, Dundee.DESIGNUnlinked anonymous hepatitis C virus antibody testing of residual sera from specimens sent to the virus laboratory for routine serological testing. The results were linked to non-identifying risk information.RESULTSOverall anti-hepatitis C virus prevalence was 0.6% (23/3,548). Prevalences among injecting drug users, non-injectors who had a sexual partner who injected, and those with neither risk respectively were 41% (7/17), 15% (5/33) and 0.3% (11/3,498). Relative risks for being an injector and a sexual partner of an injector respectively were 131 (95% CI 58-297) and 48 (95% CI 5-32). It is estimated that one of the 18 antenatal clinic attenders gave birth to an infected child.CONCLUSIONFindings suggest that non-injecting partners of injectors may be at considerable risk of acquiring hepatitis C virus sexually. Efforts to promote the use of condoms among injectors and their sexual partners should be increased. Selective anti-hepatitis C virus screening of women who reported high risk behaviour would have failed to detect half the cases. Research to gauge the views of women of childbearing age on anti-hepatitis C virus testing is required.

**Database:** Medline

**61. Hepatitis C virus infection in pregnant women and their children**

**Author(s):** Pembrey L.; Newell M.L.; Tovo P.A.

**Source:** Italian Journal of Gynaecology and Obstetrics; 2000; vol. 12 (no. 1); p. 21-28

**Publication Date:** 2000

**Publication Type(s):** Article

**Abstract:**Objective: To review the current evidence relating to hepatitis C virus infection in pregnant women and their children. Methods: Relevant papers published since 1996 were reviewed. Data on antenatal HCV prevalence, vertical transmission rates and risk factors for vertical transmission are summarised. Antenatal screening programmes, timing of transmission, natural history of vertically acquired infection and treatment of infected children are discussed. Results: Seroprevalence among unselected antenatal populations is 1-2%. The risk of vertical transmission is usually between 3-5% but higher rates of 10-20% are observed in HIV-coinfected women. HIV-coinfection and high levels of maternal viraemia are associated with an increased risk of vertical transmission. Mode of delivery and breastfeeding are not related to risk of transmission in women with HCV infection alone. However, elective caesarean section delivery is associated with a reduction in risk, and breastfeeding is associated with an increase in risk of transmission among HCV/HIV coinfecting women.

Conclusions: Antenatal HCV screening of all women cannot be recommended given the current state of knowledge. HCV infection alone should not be an indication for elective caesarean section and breastfeeding should not be discouraged in asymptomatic women. However, HIV infected women should be tested for HCV infection in pregnancy. The case for offering a caesarean section delivery and advising avoidance of breastfeeding to HIV infected women is strengthened if they are also HCV infected. Large, prospective studies are needed to elucidate the natural history of vertically acquired HCV infection and to evaluate potential treatment for infected children.

**Database:** EMBASE

## **62. Pregnancy and hepatitis C virus infection**

**Author(s):** Paternoster D.; Santarossa C.; Vettore N.; Fabris F.; Palu G.; Boschetto R.; Floreani A.

**Source:** Prenatal and Neonatal Medicine; 2000; vol. 5 (no. 1); p. 42-47

**Publication Date:** 2000

**Publication Type(s):** Article

**Abstract:**Objectives: The aim of this study was to investigate the clinical and biochemical aspects of hepatitis C virus (HCV) infection during pregnancy and after delivery, and to differentiate the outcome of pregnancy between HCV RNA-positive and -negative women. Methods: The study involved 10 120 consecutive pregnant women screened in the Obstetric Department for High Risk Pregnancy at the University of Padua, Italy, between 1992 and 1998. Each woman underwent the following: serological screening for hepatitis B surface antigen (HBsAg), HCV serum markers (anti-HCV antibodies, HCV RNA, viral load), platelet-associated IgG and serum bindable anti-platelet IgG, and antibodies to the human immunodeficiency virus. Results: Of the 10 120 pregnant women, 115 (1.13%) tested positive for the presence of anti-HCV antibodies. Of the 115 anti-HCV antibody-positive mothers observed at initial screening, 68 (59.1%) were found to be positive for HCV RNA, the remaining 47 (40.9%) being HCV RNA-negative. Four of the 68 HCV RNA-positive women incurred stillbirth (5.9%); the remaining 64 HCV RNA-positive mothers gave birth to 68 babies, including four sets of twins. Conclusions: There is no risk to pregnancy outcome in HCV RNA-positive and -negative mothers. Pregnancy does not induce a deterioration of liver disease and HCV infection does not increase the risk of obstetric complications.

**Database:** EMBASE



**63. The prevalence and genetic diversity of hepatitis C infection in antenatal clinic attenders in two regions of England.**

**Author(s):** Balogun, M A; Ramsay, M E; Parry, J V; Donovan, L; Andrews, N J; Newham, J A; Cliffe, S; Harris, K A; Teo, C G

**Source:** Epidemiology and infection; Dec 2000; vol. 125 (no. 3); p. 705-712

**Publication Date:** Dec 2000

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 11218221

Available at [Epidemiology and infection](#) - from PubMed Central

Available at [Epidemiology and infection](#) - from Unpaywall

**Abstract:**The prevalence and genetic diversity of hepatitis C infection in women attending antenatal clinics in two regions of England was investigated to inform future surveillance and control measures. Women booking into antenatal care are routinely offered a test for immunity to rubella. Serum residues from these tests were unlinked, anonymized and archived as part of the Unlinked Anonymous Prevalence Monitoring Programme (UAPMP). The serum specimens were tested for anti-HCV using a cost-effective pooling strategy. After taking into account differential sampling from the UAPMP serum archive, the adjusted overall prevalence of anti-HCV was 0.43% (95% CI: 0.32-0.53) in London and 0.21% (95% CI: 0.14-0.28) in the Northern and Yorkshire region. Restriction fragment length polymorphism of amplified HCV RNA identified type 3a as the most common HCV genotype in these antenatal women. The prevalence of anti-HCV in antenatal women in the UK is low and consistent with that expected from injecting drug use.

**Database:** Medline

**64. Effectiveness of second- and third-generation immunoassays for the detection of hepatitis C virus infection in pregnant women.**

**Author(s):** Lin, H H; Kao, J H

**Source:** The journal of obstetrics and gynaecology research; Aug 2000; vol. 26 (no. 4); p. 265-270

**Publication Date:** Aug 2000

**Publication Type(s):** Research Support, Non-u.s. Gov't Comparative Study Journal Article

**PubMedID:** 11049236

Available at [The journal of obstetrics and gynaecology research](#) - from Wiley Online Library

**Abstract:**OBJECTIVETo compare the sensitivity and specificity of a third-generation anti-hepatitis C virus (anti-HCV) assay (HCV 3.0) with second-generation one (HCV 2.0), and correlate with HCV-RNA positivity by reverse-transcription polymerase chain reaction (RT-PCR).METHODSWe enrolled 197 pregnant women without screening for alanine aminotransferase (ALT) (Group A) and 324 pregnant women with elevated ALT activity (> 45 IU/l) (Group B). Each serum sample was tested by second- and third-generation tests, and anti-HCV titer was determined by serial dilutions. Anti-HCV-positive samples were subjected to HCV-RNA assays.RESULTSThree (1.5%) and 4 (2.0%) of the 197 group A subjects were anti-HCV-positive by the second- and third-generation methods, respectively, while 17 (5.3%) and 21 (6.5%) of group B were positive, respectively. Three (1.5%) in group A and 8 (2.5%) in group B were HCV 2.0-negative, but positive for HCV 3.0. The sensitivity, specificity, positive and negative predictive values of HCV 2.0 and HCV 3.0 for positive HCV-RNA in both groups were 67 vs 100%, 30 vs 75%, 67 vs 92%, and 30 vs 100%, respectively. The anti-HCV-positive samples with optical density (O.D.) or = 1.0 were all HCV-RNA-positive.CONCLUSIONSThe performance of HCV 3.0 is better than that of HCV 2.0, and anti-HCV-positive samples with O.D. < 1.0 are negative for HCV-RNA.

**Database:** Medline

**65. Seroprevalence and assessment of risk factors for hepatitis C virus infection in pregnancy.**

**Author(s):** Sfameni, S F; Francis, B; Wein, P

**Source:** The Australian & New Zealand journal of obstetrics & gynaecology; Aug 2000; vol. 40 (no. 3); p. 263-267

**Publication Date:** Aug 2000

**Publication Type(s):** Comparative Study Journal Article

**PubMedID:** 11065031

Available at [The Australian & New Zealand journal of obstetrics & gynaecology](#) - from Wiley Online Library

**Abstract:** Screening for hepatitis B is routinely performed in most antenatal clinics. Whether the same should occur for hepatitis C needs to be assessed for each population by determining the prevalence of this infection within the community and whether any particular high-risk group can be identified. A series of 2,000 consecutive patients attending for antenatal care at the Mercy Hospital for Women, Melbourne, was tested for evidence of hepatitis C infection. The prevalence of hepatitis C infection in this group was 1.45% (95% confidence interval 0.97-2.1%). Significant independent risk factors were a history of intravenous drug use, blood transfusion and previous pregnancy ending prior to 20 weeks' gestation. Currently no treatment exists for hepatitis C and as there are no effective means of preventing transmission to the baby, routine screening cannot be justified in view of the low prevalence of this infection among antenatal patients. Selective screening of patients with relevant risk factors for hepatitis C should be carried out as the most efficient and cost-effective strategy in pregnancy.

**Database:** Medline

**66. Prevalence of hepatitis C among pregnant women attending an inner London obstetric department: uptake and acceptability of named antenatal testing.**

**Author(s):** Ward, C; Tudor-Williams, G; Cotzias, T; Hargreaves, S; Regan, L; Foster, G R

**Source:** Gut; Aug 2000; vol. 47 (no. 2); p. 277-280

**Publication Date:** Aug 2000

**Publication Type(s):** Journal Article

**PubMedID:** 10896922

Available at [Gut](#) - from BMJ Journals - NHS

Available at [Gut](#) - from Europe PubMed Central - Open Access

Available at [Gut](#) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:** **OBJECTIVE** To examine the value of universal antenatal screening for hepatitis C virus (HCV) infection among an inner London population, with regard to prevalence, uptake, and acceptability of testing, and identification of new cases. **DESIGN** Serum analysis for antibodies against HCV in pregnant women following informed consent ("opt out" policy). Samples positive for HCV antibodies were tested for the presence of HCV RNA by polymerase chain reaction. Information on hepatitis C was provided for all women. Acceptability of antenatal HCV testing and identification of risk factors for infection were assessed through the use of questionnaires randomly distributed among a cohort of 300 pregnant women. **SETTING** Antenatal clinics at St Mary's Hospital, London, serving a multiethnic population. **SUBJECTS** A total of 4825 pregnant women booking for antenatal care

between November 1997 and April 1999. **RESULTS** The overall prevalence of anti-HCV was 0.8% and HCV viraemia was 0.6%. Ninety eight per cent of samples (n=4729) were tested; 0.2% of women had a false positive result. In 207 women who completed a questionnaire regarding our testing policy, 84% made a positive decision to be tested for anti-HCV and 92% said that HCV testing should be offered to all pregnant women. The majority (22/32-69%) of HCV infected women were newly diagnosed and although HCV positive women were significantly more likely to have a history of drug abuse, most (16/22-73%) new cases had no identified risk factors for HCV infection at booking. **CONCLUSION** The prevalence of anti-HCV in an inner London multiethnic antenatal population is high (0.8%). Routine screening for HCV is acceptable to pregnant women. The majority of women diagnosed during their current pregnancy would not have been identified as HCV infected by epidemiological risk factors at the time of booking.

**Database:** Medline

### **67. Obstetric risks and vertical transmission of hepatitis C virus infection in pregnancy.**

**Author(s):** Hillemanns, P; Dannecker, C; Kimmig, R; Hasbargen, U

**Source:** Acta obstetricia et gynecologica Scandinavica; Jul 2000; vol. 79 (no. 7); p. 543-547

**Publication Date:** Jul 2000

**Publication Type(s):** Case Reports Journal Article

**PubMedID:** 10929952

Available at [Acta obstetricia et gynecologica Scandinavica](#) - from Wiley Online Library

**Abstract:** **BACKGROUND** Reports of obstetric complications of mothers infected with hepatitis C virus (HCV) are limited and the risk of mother-to-infant transmission varies widely. We assessed the course of pregnancy in HCV-infected women and the rate of vertical transmission. **METHODS** Between October 1992 and December 1996, 3712 pregnant patients of the university hospital Grosshadern Munich, Germany, were screened for anti-HCV and analyzed for HCV-RNA by polymerase chain reaction. Clinical and biochemical parameters were monitored. Children born to HCV-positive women were followed up at 6, 12 and 18 month intervals and screened for anti-HCV and HCV-RNA. **RESULTS** Thirteen (42%) of 31 anti-HCV positive patients had a cesarean section which was twice the rate of that in the HCV-negative group ( $p=0.004$ ). None of the cesarean deliveries was due to complications directly caused by HCV infection. Nine (29%) of 31 anti-HCV positive women had preterm delivery compared to 19% in the anti-HCV negative patients, the difference being statistically not significant. Fetal outcome parameters such as APGAR score, umbilical pH and birth weight of HCV infected pregnancies were not impaired. All 29 babies tested for anti-HCV were seropositive after birth. Between 12 and 18 months of age, 10% of the infants still were anti-HCV positive, whereas only one baby was HCV-RNA positive beyond 12 months yielding a vertical transmission rate of 5% among HCV-RNA positive mothers. **CONCLUSION** Anti-HCV positive pregnancies have an increased risk of cesarean delivery, probably due to the high-risk collective of anti-HCV positive mothers. The mother-to-child transmission rate is low and linked to maternal HCV-RNA positivity.

**Database:** Medline

**68. Routine antenatal screening: A need to evaluate Australian practice**

**Author(s):** Oats J.J.N.

**Source:** Medical Journal of Australia; Apr 2000; vol. 172 (no. 7); p. 311-312

**Publication Date:** Apr 2000

**Publication Type(s):** Editorial

**PubMedID:** 10844915

Available at [Medical Journal of Australia](#) - from Wiley Online Library Science , Technology and Medicine Collection 2019

**Database:** EMBASE

**69. Antenatal hepatitis C virus screening and management of infected women and their children: Policies in Europe**

**Author(s):** Tovo P.-A.; Pembrey L.; Newell M.-L.

**Source:** European Journal of Pediatrics; 1999; vol. 158 (no. 10); p. 842-846

**Publication Date:** 1999

**Publication Type(s):** Article

**PubMedID:** 10486090

Available at [European journal of pediatrics](#) - from SpringerLink - Medicine

Available at [European journal of pediatrics](#) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:** A postal survey of 31 European centres was conducted to document current practices regarding screening and management of hepatitis C virus (HCV)- infected pregnant women and their children. Antenatal HCV prevalence was low. Universal antenatal screening programmes were in place in ten centres, selective screening occurred in ten other centres, two did not specify the type of policy, and there was no screening programme in nine centres. Numbers of HCV-infected children were low. Breastfeeding was recommended for infants of infected mothers in ten centres, discouraged in ten centres, in three centres women were merely informed of the risks, and there were no guidelines in eight centres. Polymerase chain reaction was available in all centres. In 17 centres children born to HCV-infected women were seen every 3 months for at least the 1st year. Conclusion: The optimum antenatal hepatitis C virus screening approach and the appropriateness of breastfeeding recommendations are unclear and this survey highlights the lack of uniformity in current practice.

**Database:** EMBASE

## **70. Viral hepatitis and pregnancy**

**Author(s):** Michielsen P.P.; Van Damme P.

**Source:** Acta Gastro-Enterologica Belgica; 1999; vol. 62 (no. 1); p. 21-29

**Publication Date:** 1999

**Publication Type(s):** Review

**PubMedID:** 10333596

**Abstract:** This paper reviews data on the mutual relationship between pregnancy and viral hepatitis and the mother-to-infant transmission of the virus. In the western world, hepatitis A, B or C do not seem to influence the course of pregnancy, or to be associated with foetal risks. In contrast, women who contract a hepatitis E infection in their third trimester of pregnancy have a relatively high probability to develop a fulminant hepatitis. Mother-to-infant transmission of hepatitis A seems to be very uncommon. On the contrary, HBsAg and HBeAg positive mothers have a 80-90% risk to transmit the disease to their offspring, more than 85% of these becoming chronic carriers of HBsAg. The risk depends on the level of viral replication. In HBsAg positive and HBeAg negative mothers the rate of transmission is only 2-15%, these babies rarely become carriers. A possible explanation is the transplacental passage of the HBeAg making the infant tolerant to the hepatitis B virus. As most of the infections occur during or directly after delivery, the neonates are suitable for postexposure prophylaxis. It is recommended by the Centers for Disease Control and Prevention and the American Academy of Pediatrics that newborns of HBsAg positive mothers should receive hepatitis B immunoglobulins within 12 hours after birth concurrently with the first paediatric dose of the vaccine. Vaccination should be completed at 1 and 6 months. This regimen confers a protective efficacy of  $\geq 90\%$ . Vertical transmission of hepatitis C is considered to be relatively rare, around 11% when HCV-RNA is positive. The highest rates of vertical transmission of HCV are noted in women with high HCV-RNA level or concurrent HIV infection. The risk is extremely low when no HCV-RNA is detected. There is currently no treatment to prevent this vertical transmission; routine screening of all mothers is unwarranted, and pregnancies among HCV-positive mothers should not be discouraged, but their infants should be tested for anti-HCV at 1 year and followed for the development of hepatitis. Breast feeding does not seem to play an important role in the transmission of hepatitis B and C.

**Database:** EMBASE

## **71. Hepatitis C: screening in pregnancy.**

**Author(s):** Burns, D N; Minkoff, H

**Source:** Obstetrics and gynecology; Dec 1999; vol. 94 (no. 6); p. 1044-1048

**Publication Date:** Dec 1999

**Publication Type(s):** Journal Article

**PubMedID:** 10576199

Available at [Obstetrics and gynecology](#) - from Ovid (LWW Total Access Collection 2019 - with Neurology)

**Abstract:** Hepatitis C virus infection, which is far more prevalent than human immunodeficiency virus (HIV)-1, can lead to cirrhosis, hepatocellular carcinoma, hepatic failure, and death. Like HIV-1, hepatitis C is transmitted parenterally, sexually, and from mother to infant. The American Academy of Pediatrics and the Centers for Disease Control and Prevention (CDC) recently recommended that all children born to women who are infected with hepatitis C virus or have risk factors for infection be screened for hepatitis C. Most infected women are asymptomatic and unaware of their infection,

so routine prenatal testing is needed to fully meet that goal. We do not believe that current data justify universal testing, but we believe it is time for all obstetricians to test selectively based on risk factors.

**Database:** Medline

## **72. Hepatitis C virus infection in pregnancy.**

**Author(s):** Floreani, A; Paternoster, D; Zappala, F; Cusinato, R; Bombi, G; Grella, P; Chiamonte, M

**Source:** British journal of obstetrics and gynaecology; Apr 1996; vol. 103 (no. 4); p. 325-329

**Publication Date:** Apr 1996

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 8605128

Available at [British journal of obstetrics and gynaecology](#) - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection [location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

**Abstract:**OBJECTIVETo evaluate the clinical aspects of hepatitis C virus (HCV) liver disease in anti-HCV+ve mothers, both during pregnancy and six months after delivery, and to assess the outcome of pregnancy.SETTINGObstetric department for high risk pregnancies of the University of Padova, Italy.PARTICIPANTSSeventeen hundred consecutive pregnant women were studied.METHODSEach woman underwent the following: 1. serological screening for hepatitis surface antigen (HBsAg), antibodies to HCV (anti-HCV), antibodies to human immunodeficiency virus type 1 (HIV1) within the first trimester of pregnancy; and 2. clinico-biochemical assessment in order to ascertain previous or active liver disease and risk factors for viral infections.RESULTSTwenty-nine (1.7%) of the 1700 women were found anti-HCV positive. Eight of them had an associated positivity for HIV infection. HCV-RNA was positive in 64.2% of anti-HCV positive women. Liver function tests (included transaminases) were within the normal range in 27 mothers (both during and six months after delivery). Only 2/29 women had a slight increase in AST/ALT; liver biopsy in these cases was compatible with mild chronic active hepatitis. In all women the outcome of pregnancy was favourable (12/29 anti-HCV positive mothers underwent caesarean delivery for causes independent from HCV infection).CONCLUSIONSA substantial proportion of anti-HCV positive pregnant mothers, even if asymptomatic, have circulating HCV-RNA. The pregnancy does not induce a deterioration of liver disease, and vice versa, HCV infection does not increase the risk of obstetric complications.

**Database:** Medline

**73. Hepatitis C virus infection in pregnant women: detection by different anti-HCV immunoassays and serum HCV-RNA.**

**Author(s):** Lin, H H; Hsu, H Y; Lee, T Y; Kao, J H; Chen, P J; Chen, D S

**Source:** Asia-Oceania journal of obstetrics and gynaecology; Mar 1994; vol. 20 (no. 1); p. 13-18

**Publication Date:** Mar 1994

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 7513510

**Abstract:**To assess the seroepidemiology of hepatitis C virus (HCV) infection in pregnant women and explore the correlation between different anti-HCV immunoassays, we investigated 2 independent groups in Taipei: 1,687 pregnant women without screening for serum alanine aminotransferase (ALT) (group A) and 260 pregnant women with elevated ALT activity (> 45 IU/l) screened from 15,978 cases (group B). In group A, 11 women (0.65%) were found to be anti-HCV-positive by first-generation tests and 21 (1.24%) by second-generation tests, while 7 (2.69%) and 15 (5.77%) of the group B subjects were positive, respectively. The results of the second-generation assays, based either on recombinant proteins or synthetic peptides, were identical. Among the 36 second-generation anti-HCV-positive cases, 18 (86%) of the 21 cases in group A and 13 (87%) of the 15 cases in group B contained serum HCV-RNA by RT-PCR. We conclude that the prevalence of anti-HCV in pregnant Taiwanese women is 1.24%, and the prevalence is 5.77% among those with an elevated ALT level. HCV-RNA is present in 86% of the cases positive for anti-HCV. The discrepancy between positive anti-HCV and negative HCV-RNA in some pregnant women suggests that anti-HCV positivity in such cases may merely represent a past HCV infection or a fluctuating viremia.

**Database:** Medline

**74. Comparison of three different immunoassays and PCR for the detection of hepatitis C virus infection in pregnant women in Taiwan**

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**Publication Type(s):** Article

**PubMedID:** 8212666

**Abstract:**To compare different hepatitis C virus (HCV) immunoassays and HCV-RNA in pregnant women, we investigated two independent groups: 1,687 cases without screening for serum alanine aminotransferase (ALT) (group A) and 333 cases with elevated ALT (>45 IU/l) (group B), after screening 21,459 pregnant women. In group A, 11 (0.65%) and 21 (1.24%) were anti-HCV-positive by first- and second-generation tests, respectively, while in group B 8 (2.40%) and 19 (5.71%) were positive, respectively. The results revealed by second-generation assays based on either recombinant protein or synthetic peptides were identical, as were the anti-HCV titers in group B. Among 40 second-generation anti-HCV-positive cases, 18 (86%) of 21 in group A and 17 (89%) of the 19 in group B contained serum HCV-RNA by RT-PCR. Thus the prevalence of anti-HCV in Taiwanese pregnant women is 1.24% versus 5.71% in those with elevated ALT level.

**Database:** EMBASE



## Strategy 716196

#	Database	Search term	Results
1	Medline	("hepatitis c").ti,ab	73591
2	Medline	exp "HEPATITIS C"/	61569
3	Medline	(1 OR 2)	87250
4	Medline	(screen*).ti,ab	696147
5	Medline	exp "PRENATAL DIAGNOSIS"/	71831
6	Medline	exp "MASS SCREENING"/	122467
7	Medline	(4 OR 5 OR 6)	796665
8	Medline	(pregnan*).ti,ab	471861
9	Medline	exp PREGNANCY/	871068
10	Medline	(8 OR 9)	973549
11	Medline	(3 AND 7 AND 10)	391
12	EMBASE	("hepatitis c").ti,ab	108369
13	EMBASE	exp "HEPATITIS C"/	111830
14	EMBASE	(12 OR 13)	138912
15	EMBASE	exp "PRENATAL SCREENING"/	8344
16	EMBASE	(screen*).ti,ab	981587
17	EMBASE	exp "MASS SCREENING"/	229915
18	EMBASE	(15 OR 16 OR 17)	1068178
19	EMBASE	(pregnan*).ti,ab	606049
20	EMBASE	exp PREGNANCY/	641679

21	EMBASE	(19 OR 20)	862384
22	EMBASE	(14 AND 18 AND 21)	549
23	EMBASE	(comment OR conference OR note OR letter).pt	6195889
24	EMBASE	22 not 23	405
25	EMBASE	24 [English language]	359
26	CINAHL	("hepatitis c").ti,ab	11979
27	CINAHL	exp "HEPATITIS C"/	13262
28	CINAHL	(26 OR 27)	16212
29	CINAHL	exp "PRENATAL DIAGNOSIS"/	17333
30	CINAHL	exp "HEALTH SCREENING"/	80897
31	CINAHL	(screen*).ti,ab	146289
32	CINAHL	(29 OR 30 OR 31)	201001
33	CINAHL	(pregnan*).ti,ab	112573
34	CINAHL	exp PREGNANCY/	184517
35	CINAHL	(33 OR 34)	216059
36	CINAHL	(28 AND 32 AND 35)	109