Date of Search: 29/11/2016
Sources Searched: Medline, Embase, Cinahl, NHS Evidence.

Toxoplasmosis in Pregnancy and Childbirth

Congenital toxoplasmosis: Clinical features, outcomes, treatment, and prevention.

Source: Tropical parasitology; 2016; vol. 6 (no. 2); p. 113-122

Publication Date: 2016

Publication Type(s): Journal Article

Author(s): Singh, Sarman

Available in full text at Tropical Parasitology - from National Library of Medicine

Abstract: Toxoplasmosis is caused by a coccidian parasite, Toxoplasma gondii. The parasite is highly prevalent both in humans and in warm-blooded animals. Cat family animals are definitive host, and these animals excrete the infective oocysts in their feces. Humans, though not definitive host, get infection by consuming water or food contaminated with cat feces. Rarely, infection can also take place through transfusing the infected blood, through transplantation of infected organs, or transplacentally from infected mother to fetus. Transplacental infection can cause congenital infection with varied degree of clinical manifestations, which depend on the age of fetus when infection took place. Diagnosis of congenital toxoplasmosis is difficult to establish until it is suspected and laboratory investigations are carried out. In more than 75% of cases, acute infection is missed due to very mild or unnoticeable clinical symptoms and signs. In India, a prevalence rate of 22.4% (8.8-37.3%) has been reported with an overall IgM positivity of 1.43%. It is estimated that approximately between 56,737 and 176,882 children per year are born in India with a possible risk of congenital toxoplasmosis. The diagnosis of congenital toxoplasmosis can be made by serological methods which are most commonly used. The other methods are parasite isolation by culture and molecular methods. Toxoplasmosis is treatable and transplacental transmission can be prevented by spiramycin, which concentrates in the placenta. However, if infection has done any damage to the fetus or the parasite has passed the placenta, spiramycin cannot reverse the damage. Prevention remains the best remedy.

Database: Medline

Performance of Polymerase Chain Reaction Analysis of the Amniotic Fluid of Pregnant Women for Diagnosis of Congenital Toxoplasmosis: A Systematic Review and Meta-Analysis.

Source: PloS one; 2016; vol. 11 (no. 4); p. e0149938

Publication Date: 2016

Publication Type(s): Meta-analysis Journal Article Review

Author(s): de Oliveira Azevedo, Christianne Terra; do Brasil, Pedro Emmanuel A A; Guida, Letícia; Lopes Moreira, Maria Elizabeth

Available in full text at PLoS ONE - from National Library of Medicine

Available in full text at PLoS One - from ProQuest

Available in full text at PLoS ONE - from National Library of Medicine

Available in full text at PLoS One - from Allen Press

Abstract: Congenital infection caused by Toxoplasma gondii can cause serious damage that can be diagnosed in utero or at birth, although most infants are asymptomatic at birth. Prenatal diagnosis

of congenital toxoplasmosis considerably improves the prognosis and outcome for infected infants. For this reason, an assay for the quick, sensitive, and safe diagnosis of fetal toxoplasmosis is desirable. To systematically review the performance of polymerase chain reaction (PCR) analysis of the amniotic fluid of pregnant women with recent serological toxoplasmosis diagnoses for the diagnosis of fetal toxoplasmosis. A systematic literature review was conducted via a search of electronic databases; the literature included primary studies of the diagnostic accuracy of PCR analysis of amniotic fluid from pregnant women who seroconverted during pregnancy. The PCR test was compared to a gold standard for diagnosis. A total of 1.269 summaries were obtained from the electronic database and reviewed, and 20 studies, comprising 4.171 samples, met the established inclusion criteria and were included in the review. The following results were obtained: studies about PCR assays for fetal toxoplasmosis are generally susceptible to bias; reports of the tests' use lack critical information; the protocols varied among studies; the heterogeneity among studies was concentrated in the tests' sensitivity; there was evidence that the sensitivity of the tests increases with time, as represented by the trimester; and there was more heterogeneity among studies in which there was more time between maternal diagnosis and fetal testing. The sensitivity of the method, if performed up to five weeks after maternal diagnosis, was 87% and specificity was 99%. The global sensitivity heterogeneity of the PCR test in this review was 66.5% (I(2)). The tests show low evidence of heterogeneity with a sensitivity of 87% and specificity of 99% when performed up to five weeks after maternal diagnosis. The test has a known performance and could be recommended for use up to five weeks after maternal diagnosis, when there is suspicion of fetal toxoplasmosis.

Database: Medline

The correlation between Toxoplasma gondii infection and prenatal depression in pregnant women

Source: European Journal of Clinical Microbiology and Infectious Diseases; Nov 2016; vol. 35 (no. 11); p. 1829-1835

Publication Date: Nov 2016

Publication Type(s): Journal: Article

Publisher: Springer Verlag (E-mail: service@springer.de)

Author(s): Nourollahpour Shiadeh M.; Danesh M.; Rostami A.; Seyyedtabaei S.J.; Pearce B.D.; Gholipourmalekabadi M.; Newport D.J.; Mehravar S.

Abstract: Previous studies have demonstrated that latent toxoplasmosis is associated with neuropsychiatric disorders. We evaluated the correlation between Toxoplasma gondii infection and prenatal depression. In this case-control study, we enrolled 116 depressed pregnant women and 244 healthy controls. The Edinburgh Postpartum Depression Scale (EPDS) was used to evaluate the depression symptom severity in study participants. All participants were screened for the anti-Toxoplasma IgG by enzyme-linked immunosorbent assay. Seroprevalence of T. gondii did not significantly differ between the depressed pregnant women and healthy controls (OR = 1.4; 95 % CI = 0.9-2.19; P = 0.142). T. gondii IgG titer was significantly higher in depressed women (18.6 +/- 10.9 IUs) than those in the control group (13.6 +/- 8.1 IUs) (z = -5.36, P < 0.001). The T. gondii-positive depressed women showed a positive correlation of T. gondii IgG titer with the EPDS scores (r = 0.52; P < 0.01). The mean EPDS score was also significantly higher in the T. gondii-positive depressed women (20.7 +/- 2.7) compared with the controls (18.36 +/- 2.7) (P < 0.001). The results obtained from the current study revealed that T. gondii infection might affect susceptibility to depression and severity of depressive symptoms in pregnant women, particularly in those patients who have high antibody titers. Further study is required to fully elucidate the characteristics and mechanisms of this association.

Database: EMBASE

Is Toxoplasma gondii type related to clinical outcome in human congenital infection? Systematic and critical review

Source: European Journal of Clinical Microbiology and Infectious Diseases; Jul 2016; vol. 35 (no. 7); p. 1079-1088

Publication Date: Jul 2016

Publication Type(s): Journal: Review

Publisher: Springer Verlag (E-mail: service@springer.de)

Author(s): Rico-Torres C.P.; Vargas-Villavicencio J.A.; Correa D.

Available in full text at European Journal of Clinical Microbiology and Infectious Diseases - from Springer Link Journals

Abstract: In human congenital toxoplasmosis the effects of parasite burden and pregnancy time at infection on clinical outcome are well known, but there is controversy regarding the role of Toxoplasma gondii type. Through a systematic review of the literature, we aimed to discern if T. gondii type has a role on clinical outcome in human congenital toxoplasmosis. We built up a database of congenital toxoplasmosis from reports of cases, case series and screening-based cohorts, which had information about parasite type, gestation time at maternal infection and/or clinical outcome in the product. Then, we obtained frequencies for loci used to genotype geographical origin of cases and types found. Also, odds ratios were calculated for association between time of maternal infection or parasite type on outcome. Type II parasites were the most common in Europe, Asia and Africa, while in America there were mainly atypical strains. More newborns with clinical problems were born from mothers infected during the first half of gestation than from those acquiring the parasite after week 24, regardless of parasite genotype (92.9 vs. 16.1 %, OR = 67.9, CI95 25.4-181.6). Type I and atypical parasites were associated with clinical problems as opposed to types II and III, regardless of pregnancy period at infection (86.9 vs. 72.9 %, OR = 2.47, CI95 1.1-5.4). A significant and remarkable tendency of type I parasites to be present during early pregnancy was also observed (94.4 vs. 5.6 %, P < 0.009). In addition to parasite burden and period of gestation, T. gondii genotype seems involved in CT clinical outcome.

Database: EMBASE

Listeriosis and Toxoplasmosis in Pregnancy.

Source: Journal of Perinatal & Neonatal Nursing; Apr 2016; vol. 30 (no. 2); p. 131-138

Publication Date: Apr 2016

Publication Type(s): Academic Journal

Publisher: Lippincott Williams & Wilkins

Author(s): Pfaff, Nicole Franzen; Tillett, Jackie

Available in full text at Journal of Perinatal and Neonatal Nursing - from Ovid

Database: CINAHL

Prenatal education for congenital toxoplasmosis.

Source: The Cochrane database of systematic reviews; 2015 (no. 10); p. CD006171

Publication Date: 2015

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

Author(s): Di Mario, Simona; Basevi, Vittorio; Gagliotti, Carlo; Spettoli, Daniela; Gori, Gianfranco; D'Amico, Roberto; Magrini, Nicola

Abstract: Congenital toxoplasmosis is considered a rare but potentially severe infection. Prenatal education about congenital toxoplasmosis could be the most efficient and least harmful intervention, yet its effectiveness is uncertain. To assess the effects of prenatal education for preventing congenital toxoplasmosis. We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (31 May 2015), and reference lists of relevant papers, reviews and websites. Randomized and quasi-randomized controlled trials of all types of prenatal education on toxoplasmosis infection during pregnancy. Cluster-randomized trials were eligible for inclusion. Two review authors independently assessed trials for inclusion and risk of bias, extracted data and checked them for accuracy. Two cluster-randomized controlled trials (RCTs) (involving a total of 5455 women) met the inclusion criteria. The two included trials measured the effectiveness of the intervention in different ways, which meant that meta-analysis of the results was not possible. The overall quality of the two studies, as assessed using the GRADE approach, was low, with high risk of detection and attrition bias in both included trials.One trial (432 women enrolled) conducted in Canada was judged of low methodological quality. This trial did not report on any of the review's pre-specified primary outcomes and the secondary outcomes reported results only as P values. Moreover, losses to follow-up were high (34%, 147 out of 432 women initially enrolled). The authors concluded that prenatal education can effectively change pregnant women's behavior as it increased pet, personal and food hygiene. The second trial conducted in France was also judged of low methodological quality. Losses to follow-up were also high (44.5%, 2233 out of 5023 women initially enrolled) and differential (40% in the intervention group and 52% in the control group). The authors concluded that prenatal education for congenital toxoplasmoses has a significant effect on improving women's knowledge, whereas it has no effect on changing women's behavior. In this trial 17/3949 pregnant women seroconverted for toxoplasmosis: 13/2591 (0.5%) in the intervention group and 4/1358 (0.3%) in the control group. The rate of seroconversion detected during the study did not differ between groups (risk ratio (RR) 1.70, 95% confidence interval (CI) 0.56 to 5.21; participants = 3949; studies = one, low quality evidence). The number of events was too small to reach conclusions about the effect of prenatal education on seroconversion rate during pregnancy.No other randomized trials on the effect of prenatal education on congenital toxoplasmosis rate, or toxoplasmosis seroconversion rate during pregnancy were detected. Even though primary prevention of congenital toxoplasmosis is considered a desirable intervention, given the lack of related risks compared to secondary and tertiary prevention, its effectiveness has not been adequately evaluated. There is very little evidence from RCTs that prenatal education is effective in reducing congenital toxoplasmosis even though evidence from observational studies suggests it is. Given the lack of good evidence supporting prenatal education for congenital toxoplasmosis prevention, further RCTs are needed to confirm any potential benefits and to further quantify the impact of different sets of educational intervention.

Database: Medline

Congenital Toxoplasmosis: A Review.

Source: Neonatal network : NN; 2015; vol. 34 (no. 5); p. 274-278

Publication Date: 2015

Publication Type(s): Journal Article

Author(s): Hampton, Marissa Martinez

Available in full text at Neonatal Network - from ProQuest

Abstract: Acute infection of toxoplasmosis during pregnancy is detrimental to the developing fetus. In the United States, approximately 1 in 10,000 live births are affected by congenital toxoplasmosis. Although multifactorial in etiology, maternal infection is primarily attributed to the consumption of contaminated meat or water. Infection and transmission to the fetus may result in devastating neurologic impairment. Screening methods for all pregnant women should be implemented in routine prenatal care. This article will highlight the inherent dangers of congenital toxoplasmosis, while including general care of the fetus for prevention of transmission, medical management, and long-term outcomes.

Database: Medline

Diagnosing congenital toxoplasmosis: Where are we? A systematic review

Source: International Archives of Medicine; 2015; vol. 8 (no. 1)

Publication Date: 2015

Publication Type(s): Journal: Review

Publisher: BioMed Central Ltd. (E-mail: info@biomedcentral.com)

Author(s): Dos Santos M.D.S.V.; Da Silva C.G.L.; De Oliveira P.N.L.; Ribeiro K.D.B.; Teixeira A.G.; Santos M.F.A.; Lopes V.H.G.; Rolim-Neto M.L.; Bianco B.; Grumach A.S.

Available in full text at International Archives of Medicine - from Free Access Content

Available in full text at International Archives of Medicine - from BioMed Central

Abstract: Purpose: Compile information on laboratory methods for diagnosis of congenital toxoplasmosis, considering the tests conducted since the gestational stage until the child period. Methods:A systematic review of 01.01.2006 to 31.12.2013 was held by VHL (Virtual Health Library). The search was performed with the descriptors "toxoplasmosis" and "diagnosis. The selected articles were indexed in MEDLINE. The information pertinent to the study was selected, categorized and analyzed. Of the 186 articles found, 41 met the eligibility criteria. Results: Laboratory tests are based on the presence of antibodies IgM and IgG anti-Toxoplasma gondii, in this sense it is important to correctly interpret serology, because the detection of specific antibodies is often delayed by the presence of maternal IgG or late production of specific antibodies in newborns. Molecular techniques (PCR) have emerged as alternative due to its higher sensitivity and specificity in diagnosing instruments, given the ability to detect parasite DNA and non-dependence of the immune response of the patient, such as serological tests. Conclusions: The need for early treatment of congenital toxoplasmosis in order to avoid sequelae justifies the search for more sensitive and specific laboratory tests in early detection of the parasite. The integration among the different levels of care in the public health system is essential for obtaining effective control of toxoplasmosis in pregnant women.

Database: EMBASE

Practice bulletin no. 151: Cytomegalovirus, parvovirus B19, varicella zoster, and toxoplasmosis in pregnancy

Source: Obstetrics and Gynecology; Jun 2015; vol. 125 (no. 6); p. 1510-1525

Publication Date: Jun 2015

Publication Type(s): Journal: Article

Publisher: Lippincott Williams and Wilkins (E-mail: agents@lww.com)

Author(s): anonymous

Available in print at Patricia Bowen Library and Knowledge Service West Middlesex university Hospital - from Obstetrics and Gynecology

Available in full text at Obstetrics and Gynecology - from Ovid

Database: EMBASE

Cesarean delivery or induction of labor does not prevent vertical transmission of toxoplasmosis in late pregnancy.

Source: International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; May 2015; vol. 129 (no. 2); p. 176-177

Publication Date: May 2015

Publication Type(s): Journal Article

Author(s): Wallon, Martine; Kieffer, François; Huissoud, Cyril; Peyron, François

Database: Medline

Effects of latent toxoplasmosis on autoimmune thyroid diseases in pregnancy.

Source: PloS one; 2014; vol. 9 (no. 10); p. e110878

Publication Date: 2014

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

Author(s): Kaňková, Šárka; Procházková, Lucie; Flegr, Jaroslav; Calda, Pavel; Springer, Drahomíra; Potluková, Eliška

Available in full text at PLoS ONE - from National Library of Medicine

Available in full text at PLoS One - from ProQuest

Available in full text at PLoS ONE - from National Library of Medicine

Available in full text at PLoS One - from Allen Press

Abstract: Toxoplasmosis, one of the most common zoonotic diseases worldwide, can induce various hormonal and behavioural alterations in infected hosts, and its most common form, latent toxoplasmosis, influences the course of pregnancy. Autoimmune thyroid diseases (AITD) belong to the well-defined risk factors for adverse pregnancy outcomes. The aim of this study was to investigate whether there is a link between latent toxoplasmosis and maternal AITD in pregnancy. Cross-sectional study in 1248 consecutive pregnant women in the 9-12th gestational weeks. Serum thyroid-stimulating hormone (TSH), thyroperoxidase antibodies (TPOAb), and free thyroxine (FT4) were assessed by chemiluminescence; the Toxoplasma status was detected by the complement fixation test (CFT) and anti-Toxoplasma IgG enzyme-linked immunosorbent assay (ELISA). Overall, 22.5% of the women were positive for latent toxoplasmosis and 14.7% were screened positive for AITD. Women with latent toxoplasmosis had more often highly elevated TPOAb than the Toxoplasma-negative ones ($p = 0.004$), and latent toxoplasmosis was associated with decrease in

serum TSH levels (p = 0.049). Moreover, we found a positive correlation between FT4 and the index of positivity for anti-Toxoplasma IgG antibodies (p = 0.033), which was even stronger in the TPOAb-positive Toxoplasma-positive women, (p = 0.014), as well as a positive correlation between FT4 and log2 CFT (p = 0.009). Latent toxoplasmosis was associated with a mild increase in thyroid hormone production in pregnancy. The observed Toxoplasma-associated changes in the parameters of AITD are mild and do not seem to be clinically relevant; however, they could provide new clues to the complex pathogenesis of autoimmune thyroid diseases.

Database: Medline

Maternal and congenital toxoplasmosis, currently available and novel therapies in horizon

Source: Frontiers in Microbiology; 2014; vol. 5

Publication Date: 2014

Publication Type(s): Journal: Review

Publisher: Frontiers Research Foundation (E-mail: info@frontiersin.org)

Author(s): Oz H.S.

Available in full text at Frontiers in Microbiology - from National Library of Medicine

Available in full text at Frontiers in Microbiology - from Free Access Content

Available in full text at Frontiers in Cellular and Infection Microbiology - from Free Access Content

Available in full text at Frontiers in Cellular and Infection Microbiology - from National Library of Medicine

Abstract: Over one billion people worldwide are predicted to harbor Toxoplasma infection frequently with unknown lifelong health consequences. Toxoplasmosis is an important cause of foodborne, inflammatory illnesses, as well as congenital abnormalities. Ubiquitous Toxoplasma has a unique tropism for central nervous system with a mind-bugging effect and is transmitted sexually through semen. Currently available therapies are ineffective for persistent chronic disease and congenital toxoplasmosis or have severe side effects which may result in life-threatening complications. There is an urgent need for safe and effective therapies to eliminate or treat this cosmopolitan infectious and inflammatory disease. This investigation discusses pathogenesis of maternal and congenital toxoplasmosis, the currently available therapies in practice, and the experimental therapeutic modalities for promising future trials. © 2014 Oz.

Database: EMBASE

Congenital Toxoplasmosis.

Source: Journal of the Pediatric Infectious Diseases Society; Sep 2014; vol. 3

Publication Date: Sep 2014

Publication Type(s): Journal Article

Author(s): McAuley, James B

Available in full text at Journal of the Pediatric Infectious Diseases Society - from Highwire Press

Available in full text at Journal of the Pediatric Infectious Diseases Society - from Oxford University Press ; Collection notes: To access please select Login with Athens and search and select NHS England as your institution before entering your NHS OpenAthens account details.

Abstract: Toxoplasmosis is caused by infection with the parasite Toxoplasma gondii. It is one of the most common parasitic infections in humans and is most typically asymptomatic. However, primary

infection in a pregnant woman can cause severe and disabling disease in the developing fetus. Recent developments have included increased understanding of the role of parasite genotype in determining infectivity and disease severity. Risk factors for acquisition of infection have been better defined, and the important role of foodborne transmission has been further delineated. In addition, strategies have emerged to decrease mother-to-child transmission through prompt identification of acutely infected pregnant women followed by appropriate treatment. Refined diagnostic tools, particularly the addition of immunoglobulin G avidity testing, allow for more accurate timing of maternal infection and hence better decision making during pregnancy. Congenitally infected children can be treated, beginning in utero and continuing through the first year of life, to ameliorate the severity of disease. However, despite these many advances in our understanding of congenital toxoplasmosis prevention and treatment, significant areas of study remain: we need better drugs, well defined strategies for screening of pregnant women, improved food safety, and improved diagnostic tests.

Database: Medline

Neuropsychiatric manifestations of latent toxoplasmosis on mothers and their offspring

Source: Journal of Maternal-Fetal and Neonatal Medicine; Sep 2014; vol. 27 (no. 13); p. 1368-1374

Publication Date: Sep 2014

Publication Type(s): Journal: Review

Publisher: Informa Healthcare (E-mail: healthcare.enquiries@informa.com)

Author(s): Abdoli A.; Arbabi M.; Dalimi A.; Ghaffarifar F.

Abstract: Toxoplasmosis is one of the most common parasitic diseases worldwide. It is estimated that approximately one-third of the world's population is latently infected. Infection generally occurs via oral the route and maternal transmission. Damage of the central nervous system is one of the most serious consequences of congenital toxoplasmosis. Moreover, recent investigations proposed that acute and sub-acute congenital toxoplasmosis as well as latent toxoplasmosis during pregnancy; play various roles in the etiology of different neuropsychiatric disorders in mothers and their offspring. This paper reviews new findings about the role of latent toxoplasmosis in the etiology of various neuropsychiatric disorders in mothers and their offspring. © 2014 Informa UK Ltd.

Database: EMBASE

Assessment of laboratory methods used in the diagnosis of congenital toxoplasmosis after maternal treatment with spiramycin in pregnancy

Source: BMC Infectious Diseases; Jun 2014; vol. 14 (no. 1)

Publication Date: Jun 2014

Publication Type(s): Journal: Article

Publisher: BioMed Central Ltd. (E-mail: info@biomedcentral.com)

Author(s): Rodrigues I.M.X.; Avelar J.B.; Castro A.M.; Costa T.L.; Amaral W.N.; Avelino M.M.

Available in full text at BMC Infectious Diseases - from ProQuest

Abstract: Background: The different laboratory methods used in the diagnosis of congenital toxoplasmosis have variable sensitivity and specificity. There is no evidence to prove that maternal treatment reduces the risk of fetal infection. The purpose of this study was to assess methods for the confirmation of congenital toxoplasmosis after maternal treatment with spiramycin during pregnancy, and to evaluate the effect of this treatment on clinical manifestations of the disease in newborns (NB).Methods: This was a community-based, cross-sectional study of acute toxoplasmosis in newborns at risk of acquiring congenital infection. Participating newborns were born in the Clinical Hospital Maternity Ward of the Federal University of Goias. Eligible participants were divided into 2 groups: group 1 consisted of 44 newborns born to mothers treated with spiramycin during pregnancy and group 2 consisted of 24 newborns born to mothers not treated with spiramycin during pregnancy because the diagnosis of toxoplasmosis was not performed. The sensitivity and specifity of PCR for T. gondii DNA in peripheral blood and serological testing for specific anti-T. gondii IgM and IgA, and the effects of maternal spiramycin treatment on these parameters, were determined by associating test results with clinical manifestations of disease.Results: The sensitivity of the markers (T. gondii DNA detected by PCR, and the presence of specific anti-T. gondii IgM and IgA) for congenital toxoplasmosis was higher in group 2 than in group 1 (31.6, 68.4, 36.8% and 3.7, 25.9, 11.1% respectively). Even with a low PCR sensitivity, the group 2 results indicate the importance of developing new techniques for the diagnosis of congenital toxoplasmosis in newborns. Within group 1, 70.4% of the infected newborns were asymptomatic and, in group 2, 68.4% showed clinical manifestations of congenital toxoplasmosis.Conclusions: The higher proportion of infants without clinical symptoms in group 1 (70.4%) suggests the maternal treatment with spiramycin delays fetal infection, reducing the clinical sequelae of the disease in newborns. Given the low sensitivity of the tests used, when there is suspicion of congenital transmission several serological and parasitological tests are required in order to confirm or exclude congenital toxoplasmosis in newborns.

Database: EMBASE

A meta analysis on risks of adverse pregnancy outcomes in Toxoplasma gondii infection

Source: PLoS ONE; May 2014; vol. 9 (no. 5)

Publication Date: May 2014

Publication Type(s): Journal: Article

Publisher: Public Library of Science (E-mail: plos@plos.org)

Author(s): Li X.-L.; Wei H.-X.; Zhang H.; Peng H.-J.; Lindsay D.S.

Available in full text at PLoS ONE - from National Library of Medicine

Available in full text at PLoS One - from ProQuest

Available in full text at PLoS ONE - from National Library of Medicine

Available in full text at PLoS One - from Allen Press

Abstract: Objective: Quantified risks of congenital Toxoplasma gondii infection and abnormal pregnancy outcomes following primary maternal infection were evaluated with meta- analysis based on published studies. Methods: The related literatures were searched in multiple literature databases regardless of languages. Odds ratio (OR) and 95% confidence interval (CI) were used to evaluate the risks of vertical transmission of Toxoplasma gondii and abnormal pregnancy outcomes following primary maternal infection with meta-analysis. Results: 53 of the 2632 searched literatures were included in our analysis. The incidence of abnormal pregnancy outcomes in T. gondii infected pregnant women (infected group) was significantly higher than that in the uninfected pregnant women (control group) (OR = 5.10; 95% CI, 3.85-6.75). Toxoplasma gondii infection rate in the

abnormal-pregnancy-outcome group was significantly higher than in the normal-pregnancy group (OR = 3.71; 95% CI, 3.31-4.15). The pooled rate of vertical transmission was 20% (95% CI, 15%-26%) in maternal infection of T. gondii. The incidences of vertical transmission in women who were infected in the first, second or third trimester of pregnancy were 5% (95%CI, 2%-16%), 13% (95%CI, 7%- 23%), and 32% (95%CI, 24%-41%), respectively. The rates of vertical transmission in women who were treated with spiramycin-only, PSF (pyrimethamine + sulfadiazine + folinic acid) or PS (pyrimethamine + sulfadiazine) combined with spiramycin, or other untypical treatments were 13% (95%CI, 7%-22%), 13%(95%CI, 7%-25%), and 24%(95%CI, 18%-32%), respectively. Conclusions: Toxoplasma gondii infection can result in adverse pregnancy outcomes in pregnant women. The pooled rate of vertical transmission was 20% in maternal infection and the incidences of vertical transmission increased in the first, second or third trimester of pregnancy. The pooled rates of transmission in groups treated with spiramycin-only, PSF or PS combined with spiramycin, or other untypical treatments were not significantly different.

Database: EMBASE

Toxoplasmosis and pregnancy.

Source: Canadian Family Physician; Apr 2014; vol. 60 (no. 4); p. 334-336

Publication Date: Apr 2014

Publication Type(s): Academic Journal

Publisher: College of Family Physicians

Author(s): Chaudhry, Shahnaz Akhtar; Gad, Nanette; Koren, Gideon

Abstract: Question Congenital toxoplasmosis is a dangerous fetal infection. Why is routine screening for Toxoplasma gondii infection during pregnancy not available for most Canadians? Answer Low prevalence of the infection, high cost associated with testing, low sensitivity of screening tests, false-positive test results, and limitations of treatment effectiveness are all cited as reasons for not routinely screening for T gondii infection in Canada. Currently, screening for the detection of T gondii is only performed in Nunavik and other parts of northern Quebec owing to the high prevalence of infection in this region. Congenital toxoplasmosis causes neurologic or ocular disease (leading to blindness), as well as cardiac and cerebral anomalies.

Database: CINAHL

Diclazuril Protects against Maternal Gastrointestinal Syndrome and Congenital Toxoplasmosis.

Source: International journal of clinical medicine; Jan 2014; vol. 5 (no. 3); p. 93-101

Publication Date: Jan 2014

Publication Type(s): Journal Article

Author(s): Oz, Helieh S; Tobin, Thomas

Abstract: Toxoplasmosis is a common cause of foodborne, gastrointestinal and congenital syndrome with particularly severe or unknown health consequences. There is no safe and effective preventive or therapeutic modality against congenital toxoplasmosis or to eliminate the persistent chronic infection. Diclazuril to be safe in pregnancy and effective against gastrointestinal toxoplasmosis. CD1 programmed pregnant mice were divided into groups and administered a diet containing diclazuril, or sham control. Treatments were initiated on Day 5 of pregnancy and continued until Day 16 when dams were euthanatized. On Day 8 of pregnancy dams were infected intraperitoneally with escalating doses of tachyzoites (0, 100, 300, 600) from Type II strain. Dams were monitored daily for distress, pain, and abortion and samples collected at the end of the experiments. Infected dams developed moderate to severe Toxoplasma related complications in tachyzoites dose dependent manner. Animals became anemic and showed hydrothorax, and ascities. Diclazuril effectively protected dams from ascities and anemia ($p < 0.05$). Infected dams showed splenomegaly, with massive infiltration of epithelioid cells compared with the protective effect of diclazuril in treated animals. Infected dams exhibited severe hepatitis (score 0 to 4 scale = 3.5 ± 0.01) with influx of inflammatory and plasma cells, dysplastic hepatocytes, multinucleated giant cell transformation and hepatic cells necrosis. Diclazuril treatment significantly protected dams from hepatitis, also in tachyzoites dose (100, 300, 600) dependent manner (respectively infected-treated versus infected controls, $p < 0.001$, $p < 0.01$ and $p < 0.05$). Colonic tissues were significantly shortened in length, with infiltration of lymphocytes, and macrophages and microabscess formations in the cryptic structures, with significant improvement in diclazuril treated animals. Additionally, the number of fetuses, fetal length and fetal weight were preserved in diclazuril treated dams. This is the first report describing of diclazuril safety in pregnancy as well as efficacy against mild to moderate hepato-gastrointestinal syndrome in dams and fetal toxoplasmosis (Special issue, "Treatment of Liver Diseases").

Database: Medline

Congenital toxoplasmosis.

Source: Handbook of clinical neurology; 2013; vol. 112 ; p. 1099-1101

Publication Date: 2013

Publication Type(s): Journal Article Review

Author(s): Kieffer, François; Wallon, Martine

Abstract: Congenital toxoplasmosis results from the transplacental transmission of the parasite Toxoplasma gondii after a maternal infection acquired in pregnancy. Prevalence of congenital infection ranges from 0.1 to 0.3 per 1000 live births. The maternal-fetal transmission rate increases with gestational age at maternal seroconversion, from less than 15% at 13 weeks of gestation to over 70% at 36 weeks. Conversely, the later the maternal infection, the lower the risk of symptomatic congenital infection (infections acquired during the third trimester are most often asymptomatic at birth). Prenatal diagnosis is currently performed by PCR analysis in amniotic fluid. Antenatal management and treatment vary considerably among countries. In some European countries, maternal infections are detected through serological screening allowing a prompt treatment with spiramycin, which is expected to reduce the risk of vertical transmission. If PCR analysis in amniotic fluid is positive or if maternal infection was acquired in the third trimester of pregnancy, a combination with pyrimethamine and sulphonamide is given until delivery. Benefits of antenatal treatments remain controversial. Infected newborns are prescribed pyrimethamine and

sulphonamide for 12 months. Despite antenatal and postnatal treatment, chorioretinitis can occur at any age (prevalence>20% at 10 years of age): long-term ophthalmological follow-up remains necessary.

Database: Medline

Congenital toxoplasmosis.

Source: BMJ clinical evidence; 2013; vol. 2013

Publication Date: 2013

Publication Type(s): Journal Article Review

Author(s): Kravetz, Jeffrey

Available in full text at BMJ Clinical Evidence - from National Library of Medicine

Available in full text at Clinical Evidence - from National Library of Medicine

Available in full text at BMJ Clinical Evidence - from National Library of Medicine

Abstract: Infection with Toxoplasma gondii is asymptomatic or mild in immunocompetent people and leads to lifelong immunity, but it can have serious consequences in pregnancy. About five per 1000 non-immune pregnant women may acquire toxoplasma infection, with a 10% to 100% risk of transmission to the baby. Risks of transmission to the baby are higher later in pregnancy, but risks of infection causing harm to the baby are greater earlier in pregnancy. We conducted a systematic review and aimed to answer the following clinical questions: What are the effects on mother and baby of treating toxoplasmosis during pregnancy to reduce risk of vertical transmission and treat fetal infection? What are the effects of treating toxoplasmosis in neonates infected with toxoplasmosis prenatally? We searched: Medline, Embase, The Cochrane Library, and other important databases up to June 2013 (Clinical Evidence reviews are updated periodically; please check our website for the most up-to-date version of this review). We included harms alerts from relevant organisations such as the US Food and Drug Administration (FDA) and the UK Medicines and Healthcare products Regulatory Agency (MHRA). We found six systematic reviews, RCTs, or observational studies that met our inclusion criteria. We performed a GRADE evaluation of the quality of evidence for interventions. In this systematic review we present information relating to the effectiveness and safety of the following interventions: antiparasitic drugs in pregnancy, and antiparasitic drugs in neonates.

Database: Medline

Toxoplasmosis in Pregnancy: Prevention, Screening, and Treatment

Source: Journal of Obstetrics and Gynaecology Canada; 2013; vol. 35 (no. 1); p. 78-79

Publication Date: 2013

Publication Type(s): Journal: Article

Publisher: Elsevier Inc.

Author(s): Paquet C.; Yudin M.H.; Murphy K.E.; Allen V.M.; Bouchard Ce.; Boucher M.; Caddy S.; Castillo E.; Money D.M.; Ogilvie G.; van Schalkwyk J.; Senikas V.

Abstract: Background: One of the major consequences of pregnant women becoming infected by Toxoplasma gondii is vertical transmission to the fetus. Although rare, congenital toxoplasmosis can cause severe neurological or ocular disease (leading to blindness), as well as cardiac and cerebral anomalies. Prenatal care must include education about prevention of toxoplasmosis. The low prevalence of the disease in the Canadian population and limitations in diagnosis and therapy limit

the effectiveness of screening strategies. Therefore, routine screening is not currently recommended. Objective: To review the prevention, diagnosis, and management of toxoplasmosis in pregnancy. Outcomes: Outcomes evaluated include the effect of screening on diagnosis of congenital toxoplasmosis and the efficacy of prophylaxis and treatment. Evidence: The Cochrane Library and Medline were searched for articles published in English from 1990 to the present related to toxoplasmosis and pregnancy. Additional articles were identified through references of these articles. Values: The quality of evidence is rated and recommendations made according to guidelines developed by the Canadian Task Force on Preventive Health Care (Table). Benefits, harms, and costs: Guideline implementation should assist the practitioner in developing an approach to screening for and treatment of toxoplasmosis in pregnancy. Patients will benefit from appropriate management of this condition. Sponsor: The Society of Obstetricians and Gynaecologists of Canada.

Database: EMBASE

Congenital toxoplasmosis

Source: Early Human Development; 2013; vol. 89

Publication Date: 2013

Publication Type(s): Journal: Article

Publisher: Elsevier Ireland Ltd (P.O. Box 85, Limerick, Ireland)

Author(s): Bollani L.; Strocchio L.; Stronati M.

Abstract: Toxoplasmosis is a worldwide parasitic disease, the congenital infection being the most severe manifestation and occurs in the offspring of woman who acquire Toxoplasma gondii infection for the first time during pregnancy. The incidence and severity of congenital infection depend on when in pregnancy the mother acquires the infection. The risk of vertical transmission of the parasite rises steeply with gestational age (GA) at maternal infection. Although about 85% of infected infants are completely asymptomatic at birth, congenital toxoplasmosis may manifest at birth or in the first months of life, with extreme heterogeneity in disease severity and organ involvement. Ophthalmologic manifestations represent the main sequelae of congenital toxoplasmosis, with retinochoroiditis being the most common expression The combination of pyrimethamine with sulfadiazine currently represents the gold standard therapeutic. Associated eye pathologies may occur later in life, An adequate follow-up programme of patients with congenital toxoplasmosis should include ophthalmologic, neurological, audiometric and serologic evaluations. © 2013 Elsevier Ireland Ltd.

Database: EMBASE

The global burden of congenital toxoplasmosis: a systematic review.

Source: Bulletin of the World Health Organization; Jul 2013; vol. 91 (no. 7); p. 501-508

Publication Date: Jul 2013

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

Author(s): Torgerson, Paul R; Mastroiacovo, Pierpaolo

Available in full text at World Health Organization. Bulletin of the World Health Organization - from ProQuest

Available in full text at Bulletin of the World Health Organization - from EBSCOhost

Abstract: To estimate the global burden of congenital toxoplasmosis (CT), which results from infection of pregnant women with Toxoplasma gondii. The authors systematically searched 9 major

databases for published and unpublished sources and established direct contact with the authors of source materials. Searches were country-specific. To be included, studies had to report on the incidence of CT, on positivity to Toxoplasma-specific IgM in infants and pregnant women (including seroconversion results) or on positivity to Toxoplasma-specific IgG in the general population. Various modelling techniques were used, depending on the country-specific data available, to estimate the CT incidence and burden in each country. These data were then synthesized into an estimate of the global incidence of CT and of the global burden of CT in disability-adjusted life years (DALYs). The global annual incidence of congenital toxoplasmosis was estimated to be 190,100 cases (95% credible interval, CI: 179,300-206,300). This was equivalent to a burden of 1.20 million DALYs (95% CI: 0.76-1.90). High burdens were seen in South America and in some Middle Eastern and low-income countries. Congenital toxoplasmosis poses a substantial burden of poor health globally. Toxoplasmosis should be included in future updates of the global burden of disease and the corresponding data should be used to support public health interventions to reduce disease burden.

Database: Medline

Specificity of maternal toxoplasma gondii to risk of schizophrenia in offspring

Source: Schizophrenia Bulletin; May 2013; vol. 39

Publication Date: May 2013

Publication Type(s): Journal: Conference Abstract

Publisher: Oxford University Press

Author(s): Brown A.S.; Bao Y.; Montoya J.G.; Shen L.; Schaefer C.A.

Abstract: Background: Elevated maternal antibody to Toxoplasma gondii (T. gondii) has been associated in three previous birth cohort studies with risk of schizophrenia. In order to assess the diagnostic specificity of the association, we examined whether elevated maternal T. gondii antibody is related to bipolar disorder (BD) in adult offspring from one of the same birth cohorts in which the association was demonstrated for schizophrenia. Methods: Cases with BD were followed up by linkages between the Child Health and Development Study, and the Kaiser Permanente Medical Care Plan and Alameda County Behavioral Health Care Services databases, as well as by a large survey of the cohort. Potential cases were diagnosed with the SCID for DSM-IV-TR by consensus of three experienced psychiatric diagnosticians supplemented by medical records. Maternal archived serum specimens corresponding to BD case (N = 85) and control (N = 170) offspring matched 1:2 on date of birth, sex, and availability of archived maternal sera were assayed for antibody to T. gondii by the screen agglutination and Sabin-Feldman dye tests. Results: The proportion of BD cases with elevated maternal IgG antibody titer to T. gondii (>1:128) as compared to controls was not significantly increased [cases: 17.7%, controls: 11.8%, OR (95% CI) = 1.58, 0.71-3.02, p = 0.21]. The finding was not altered following adjustment for maternal age and other covariates. Conclusion: Elevated maternal antibody to T. gondii, measured in prospectively drawn maternal sera, was not associated with an increased risk of BD in offspring, consistent with a previous study that employed neonatal blood specimens. This finding suggests that maternal T. gondii may be a specific risk factor for schizophrenia among severe psychiatric disorders.

Database: EMBASE

Toxoplasmosis in the fetus and newborn: An update on prevalence, diagnosis and treatment

Source: Expert Review of Anti-Infective Therapy; Jul 2012; vol. 10 (no. 7); p. 815-828

Publication Date: Jul 2012

Publication Type(s): Journal: Review

Publisher: Expert Reviews Ltd. (2 Albert Place, London N3 1QB, United Kingdom)

Author(s): Moncada P.A.; Montoya J.G.

Available in full text at Expert Review of Anti-Infective Therapy - from ProQuest

Abstract: Toxoplasma gondii is an unicellular coccidian parasite with worldwide distribution. It is estimated that more than a third of the world's population has been infected with the parasite, but seroprevalence is unevenly distributed across countries and different socioeconomic strata. The majority of newborns with congenital toxoplasmosis do not have any clinical signs of the disease at birth; however, 30-70% of those with clinical abnormalities were not detected initially, and are found to have new retinal lesions consistent with toxoplasmicchorioretinitis later in life. Congenital toxoplasmosis can also cause fetal death, stillbirths or long-term disabling sequelae, particularly among untreated infants. The disease appears to be more frequent and severe at certain latitudes. Congenital toxoplasmosis can be prevented and treated during gestation. Less severe disease is commonly reported in countries where prenatal screening and treatment have been systematically implemented. By contrast, severe disease appears to be observed primarily in infants born to untreated mothers. For definition purposes, it is best to use the term toxoplasma or Toxoplasma gondii infection when referring to asymptomatic patients with primary or chronic infection, and toxoplasmosis when referring to patients with symptoms or signs. © 2012 2012 Expert Reviews Ltd.

Database: EMBASE

Efficacy of rapid treatment initiation following primary Toxoplasma gondii infection during pregnancy.

Source: Clinical infectious diseases : an official publication of the Infectious Diseases Society of America; Jun 2012; vol. 54 (no. 11); p. 1545-1552

Publication Date: Jun 2012

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

Author(s): Hotop, Andrea; Hlobil, Harald; Gross, Uwe

Available in full text at Clinical Infectious Diseases - from Highwire Press

Available in full text at Clinical Infectious Diseases - from Oxford University Press ; Collection notes: To access please select Login with Athens and search and select NHS England as your institution before entering your NHS OpenAthens account details.

Abstract: Treatment of Toxoplasma gondii infection acquired during pregnancy differs in many countries. In Germany, spiramycin is given until the 16th week of pregnancy, followed by at least 4 weeks of combination therapy with pyrimethamine, sulfadiazine, and folinic acid independent of the infection stage of the fetus. If infection of the fetus is confirmed by polymerase chain reaction or if fetal ultrasound indicates severe symptoms (hydrocephalus, ventricular dilation), treatment is continued until delivery with regular monitoring of pyrimethamine and sulfadiazine concentration in maternal blood and observation of possible adverse effects. In other European countries, such as France, only spiramycin is given unless infection of the fetus is proven. To evaluate the effectiveness of the German treatment scheme, a retrospective analysis of 685 women who showed a serological constellation consistent with primary infection in pregnancy and their children was performed. We

found an increased transmission rate to the fetus with increased time in gestation and a decreased risk of clinical manifestations. In comparison with studies performed in other countries, the overall transmission rate (4.8%) and the rate of clinical manifestations in newborns (1.6%) were lower. Use of spiramycin from time of diagnosis of acute acquisition of infection by the pregnant woman until week 16, followed by pyrimethamine, sulfadiazine, and folinic acid for at least 4 weeks in combination with a standardized follow-up program is efficient in reducing transplacental transmission of the parasite and the burden of disease in the newborn.

Database: Medline

Congenital parasitic infections: A review

Source: Acta Tropica; Feb 2012; vol. 121 (no. 2); p. 55-70

Publication Date: Feb 2012

Publication Type(s): Journal: Review

Publisher: Elsevier (P.O. Box 211, Amsterdam 1000 AE, Netherlands)

Author(s): Carlier Y.; Truyens C.; Deloron P.; Peyron F.

Abstract: This review defines the concepts of maternal-fetal (congenital) and vertical transmissions (mother-to-child) of pathogens and specifies the human parasites susceptible to be congenitally transferred. It highlights the epidemiological features of this transmission mode for the three main congenital parasitic infections due to Toxoplasma gondii, Trypanosoma cruzi and Plasmodium sp. Information on the possible maternal-fetal routes of transmission, the placental responses to infection and timing of parasite transmission are synthesized and compared. The factors susceptible to be involved in parasite transmission and development of congenital parasitic diseases, such as the parasite genotypes, the maternal co-infections and parasitic load, the immunological features of pregnant women and the capacity of some fetuses/neonates to overcome their immunological immaturity to mount an immune response against the transmitted parasites are also discussed and compared. Analysis of clinical data indicates that parasitic congenital infections are often asymptomatic, whereas symptomatic newborns generally display non-specific symptoms. The long-term consequences of congenital infections are also mentioned, such as the imprinting of neonatal immune system and the possible trans-generational transmission. The detection of infection in pregnant women is mainly based on standard serological or parasitological investigations. Amniocentesis and cordocentesis can be used for the detection of some fetal infections. The neonatal infection can be assessed using parasitological, molecular or immunological methods; the place of PCR in such neonatal diagnosis is discussed. When such laboratory diagnosis is not possible at birth or in the first weeks of life, standard serological investigations can also be performed 8-10 months after birth, to avoid detection of maternal transmitted antibodies. The specific aspects of treatment of T. gondii, T. cruzi and Plasmodium congenital infections are mentioned. The possibilities of primary and secondary prophylaxes, as well as the available WHO corresponding recommendations are also presented.

Database: EMBASE

Toxoplasma gondii: The changing paradigm of congenital toxoplasmosis

Source: Parasitology; Dec 2011; vol. 138 (no. 14); p. 1829-1831

Publication Date: Dec 2011

Publication Type(s): Journal: Review

Publisher: Cambridge University Press (E-mail: Journals_subscriptions@cup.cam.ac.uk)

Author(s): Lindsay D.S.; Dubey J.P.

Available in full text at Parasitology - from ProQuest

Abstract: Researchers have learned much concerning the population biology of Toxoplasma gondii over the past 2 decades. It is now apparent that many atypical genotypes exist besides the typical 3 genotypes (type I, type II and type III) first described from samples from Europe and the United States. These genotypes can differ in pathogenicity and transmissibility from the typical genotypes that have been used in the majority of scientific research over the past 70 years. These differences impact much of what we used to believe as facts about congenital toxoplasmosis (CT) and will be important in developing new recommendations for prevention of CT and the monitoring of women at risk for developing CT. The present review highlights new information on T. gondii genotypes and how this information will change the way we convey information about CT to pregnant women, physicians and students. Copyright © Cambridge University Press 2011.

Database: EMBASE

The placenta: A main role in congenital toxoplasmosis?

Source: Trends in Parasitology; Dec 2011; vol. 27 (no. 12); p. 530-536

Publication Date: Dec 2011

Publication Type(s): Journal: Review

Publisher: Elsevier Ltd (Langford Lane, Kidlington, Oxford OX5 1GB, United Kingdom)

Author(s): Robert-Gangneux F.; Gangneux J.-P.; Murat J.-B.; Fricker-Hidalgo H.; Brenier-Pinchart M.-P.; Pelloux H.

Abstract: Systemic infections, such as toxoplasmosis, acquired during pregnancy can lead to placental infection and have profound effects on the mother-to-child relationship and the success of pregnancy. Placental permeability to Toxoplasma gondii is a main parameter that determines parasite transmission to the foetus, and the use of antibiotics to decrease placental parasite load and prevent congenital toxoplasmosis has been suggested for decades. Although parasitological examination of the placenta at birth is commonly used to diagnose neonatal congenital toxoplasmosis, this approach can be controversial. Here we argue in favour of placental examination for both diagnostic and epidemiological purposes. © 2011 Elsevier Ltd.

Database: EMBASE

Toxoplasma infection and later development of schizophrenia in mothers.

Source: American Journal of Psychiatry; Aug 2011; vol. 168 (no. 8); p. 814-821

Publication Date: Aug 2011

Publication Type(s): Academic Journal

Publisher: American Psychiatric Publishing, Inc.

Author(s): Pedersen MG; Stevens H; Pedersen CB; Nørgaard-Pedersen B; Mortensen PB

Available in full text at American Journal of Psychiatry, The - from ProQuest

Available in full text at American Journal of Psychiatry - from Free Access Content

Abstract: Objective: Several studies based on clinical samples have found an association between Toxoplasma gondii infection and schizophrenia, and a case-control study among U.S. military personnel with specimens available from both before and after diagnosis found a positive association between T. gondii immunoglobulin G (IgG) antibody level and schizophrenia. These findings have never been replicated in a prospective cohort study. The purpose of this study was to

determine whether mothers infected with T. gondii have an elevated risk of schizophrenia or related disorders and whether the risk depends on IgG antibody level. Method: In a register-based prospective cohort study of 45,609 women born in Denmark, the level of T. gondii-specific IgG antibodies was measured in connection with childbirth between 1992 and 1995. Women were followed up from the date of delivery until 2008. Results: A significant positive association between T. gondii IgG antibody level and schizophrenia spectrum disorders was found. Mothers with the highest IgG level had a relative risk of 1.73 (95% confidence interval [CI]=1.12-2.62) compared with mothers with the lowest IgG level. For schizophrenia, the relative risk was 1.68 (95% CI=0.77-3.46). When the mothers were classified according to IgG level, only those with the highest IgG levels had a significantly higher risk of schizophrenia spectrum disorders. Conclusions: Women with high levels of T. gondii-specific IgG antibodies have a significantly elevated risk of developing schizophrenia spectrum disorders.

Database: CINAHL

Investigation and management of Toxoplasma gondii infection in pregnancy and infancy: A prospective study

Source: Acta Pharmacologica Sinica; Aug 2011; vol. 32 (no. 8); p. 1063-1070

Publication Date: Aug 2011

Publication Type(s): Journal: Article

Publisher: Nature Publishing Group (Houndmills, Basingstoke, Hampshire RG21 6XS, United Kingdom)

Author(s): Di Carlo P.; Ingrassia D.; Li Vecchi V.; Trizzino M.; Titone L.; Romano A.; Schimmenti M.G.; Novara V.; Casuccio A.; Cillino S.; Mancuso G.; La Chiusa S.

Abstract: Aim: Toxoplasma gondii infection during pregnancy poses a serious risk to the fetus, therefore timely and accurate diagnosis is essential. The aim of this study was to estimate the frequency of congenital infection via evaluating mother's immunological status and the possibility to improving the diagnostic and therapeutic approaches. Methods: Eighty five mothers with Toxoplasma seroconversion and their offspring were enrolled (among them, 2 spontaneous abortions were documented in the first trimester). Prenatal PCR diagnosis was carried out on 50 patients (60%), with 7 positive cases (14%). Morphological ultrasound scanning revealed anomalies in one fetus. Long-term follow-up included general physical examinations, serological status tested using Western blot, neuro-radiological, ophthalmologic and neurologic examinations, psychological and developmental tests, visual evoked potential tests and audiology tests, as well as anti-Toxoplasma treatment regimes. Results: Fourteen (17%) of the infants were infected at one-year serological follow-up. Chi-square for linear trend of vertical transmission from the first to the third trimester was significant (P=0.009). Western blot analysis showed IgM and IgA in half of the infected infants. In 69 uninfected infants, anti-Toxoplasma IgG immunoblot analysis excluded infection within the 3 months in 18 infants (26%) and in the others within 6 months of life. The most relevant instrumental findings are described. Conclusion: Western blot analysis may help to evaluate infection within the 6 months of life. The accuracy of ultrasound imaging to determine the brain damage in the fetus and newborns is doubtful, and should be combined with MR imaging. Multistep approaches can improve the timing of postnatal follow-up.

Database: EMBASE

Prenatal depression and anxiety in Toxoplasma gondii-positive women.

Source: American Journal of Obstetrics & Gynecology; May 2011; vol. 204 (no. 5); p. 433.e1

Publication Date: May 2011

Publication Type(s): Academic Journal

Publisher: Elsevier Science

Author(s): Groër MW; Yolken RH; Xiao JC; Beckstead JW; Fuchs D; Mohapatra SS; Seyfang A; Postolache TT; Groër, Maureen W; Yolken, Robert H; Xiao, J-C; Beckstead, Jason W; Fuchs, Dietmar; Mohapatra, Shyam S; Seyfang, Andreas; Postolache, Teodor T

Abstract: Objective: This study analyzed a relationship between prenatal mood states and serologic evidence of immune response to Toxoplasma gondii. A secondary aim was to determine whether thyroid peroxidase autoantibody status was related to T gondii status.Study Design: Pregnant women (n = 414) were measured at 16-25 weeks' gestation with demographic and mood questionnaires and a blood draw. All plasma samples were analyzed for thyroid peroxidase and T gondii immunoglobulin G, tryptophan, kynurenine, and neopterin. T gondii serotypes were also measured in the women who were T gondii positive. Cytokines were available on a subset (n = 142).Results: Women with serologic evidence of exposure to T gondii (n = 44) showed positive correlations between immunoglobulin G levels and the Profile of Mood States depression and anxiety subscales. Plasma tumor necrosis factor-α was higher in women who were positive for T gondii. Serotypes were type I (27%), type II (31%), and unclassified (42%, which shows intermediate levels of reactivity). The depression and anxiety scores were highest in type I, but this was not significant. The Profile of Mood States vigor score was lowest in type II, compared with the type I or unclassified groups.Conclusion: Higher T gondii immunoglobulin G titers in infected women were related to anxiety and depression during pregnancy. Subclinical reactivation of T gondii or immune responses to T gondii may worsen mood in pregnant women.

Database: CINAHL

Long-term outcome of children with congenital toxoplasmosis.

Source: American Journal of Obstetrics & Gynecology; Dec 2010; vol. 203 (no. 6); p. 552.e1

Publication Date: Dec 2010

Publication Type(s): Academic Journal

Publisher: Elsevier Science

Author(s): Berrébi A; Assouline C; Bessières MH; Lathière M; Cassaing S; Minville V; Ayoubi JM

Abstract:OBJECTIVE: Maternal toxoplasmosis infection acquired during pregnancy carries significant risk of fetal damage. We aimed to assess the long-term outcome of children and young adults with congenital toxoplasmosis diagnosed and treated in utero. STUDY DESIGN: This was a 20 year prospective study (1985-2005). All mothers received spiramycin, alone or associated with pyrimethamine-sulfadoxine, and underwent amniocentesis and monthly ultrasound screening. Infected children were followed every 3-6 months. RESULTS: Of 666 liveborn children (676 mothers), 112 (17%) had congenital toxoplasmosis. Among these, 107 were followed up for 12-250 months: 79 were asymptomatic (74%) and 28 had chorioretinitis (26%). Only 1 child had a serious neurological involvement. CONCLUSION: The percentage of chorioretinitis in treated children depends on length of follow-up, but this complication occurs mainly before the age of 5 years and almost always before the age of 10 years. Visual impairment was infrequently severe, and outcome appears consistently

good. Long-term follow-up is recommended to monitor ocular and neurological prognosis, whatever the practical difficulties.

Database: CINAHL

Toxoplasmosis, parvovirus, and cytomegalovirus in pregnancy

Source: Clinics in Laboratory Medicine; Sep 2010; vol. 30 (no. 3); p. 709-720

Publication Date: Sep 2010

Publication Type(s): Journal: Review

Publisher: W.B. Saunders

Author(s): Feldman D.M.; Borgida A.F.; Timms D.

Abstract: Several infections in adults warrant special consideration in pregnant women given the potential fetal consequences. Among these are toxoplasmosis, parvovirus B19, and cytomegalovirus. These infections have an important effect on the developing fetus depending on the timing of infection. This article reviews the modes of transmission as well as maternal and neonatal effects of each of these infections. In addition, recommended testing, fetal surveillance, and treatment where indicated are outlined. © 2010 Elsevier Inc.

Database: EMBASE

Other Sources:

UK National Screening Committee Recommendation on Toxoplasmosis screening in Pregnancy
https://legacyscreening.phe.org.uk/toxoplasmosis

***Toxoplasmosis in pregnancy: Prevention, Screening and Treatment (2013*)** Society of Obstetricians and Gynaecologists of Canada
https://sogc.org/wp-content/uploads/2013/02/gui285CPG1301E-Toxoplasmosis.pdf

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DynaMed [Internet]. Ipswich (MA): EBSCO Information Services. 1995 - . Record No. 114981, ***Congenital toxoplasmosis;*** [updated 2015 Feb 16, cited **29/11/2016** [about 11 screens].
http://search.ebscohost.com/login.aspx?direct=true&db=dme&AN=114981&site=dynamed-live&scope=site

Strategy 89142

#	Database	Search term	Results
1	Medline	*"TOXOPLASMOSIS, CONGENITAL"/	1882
2	Medline	(toxoplasmosis AND (pregn* OR congenital*)).ti	1771
3	Medline	*"TOXOPLASMOSIS, CONGENITAL"/ OR (toxoplasmosis AND (pregn* OR congenital*)).ti	2433
4	Medline	(*"TOXOPLASMOSIS, CONGENITAL"/ OR (toxoplasmosis AND (pregn* OR congenital*)).ti) [DT 2010-2016] [Languages English]	261
5	EMBASE	*"CONGENITAL TOXOPLASMOSIS"/	1617
6	EMBASE	(toxoplasmosis AND (pregn* OR congenital*)).ti	1816
7	EMBASE	*"CONGENITAL TOXOPLASMOSIS"/ OR (toxoplasmosis AND (pregn* OR congenital*))	6095
8	EMBASE	(*"CONGENITAL TOXOPLASMOSIS"/ OR (toxoplasmosis AND (pregn* OR congenital*)).ti) [DT 2010-2016] [Publication types Review] [Languages English]	28
9	EMBASE	(*"CONGENITAL TOXOPLASMOSIS"/ OR (toxoplasmosis AND (pregn* OR congenital*)).ti) [DT 2010-2016] [English language]	359

		[Languages English]	
10	EMBASE	(maternal*).ti	75617
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12	EMBASE	(maternal* TOXOPLASMOSIS).ti	9
13	CINAHL	(toxoplasmosis AND (pregn* OR congenital* OR maternal*)).ti	84
14	CINAHL	exp TOXOPLASMOSIS/	536
15	CINAHL	exp "PREGNANCY COMPLICATIONS, PARASITIC"/	169
16	CINAHL	exp TOXOPLASMOSIS/ AND exp "PREGNANCY COMPLICATIONS, PARASITIC"/	33
17	Medline	(maternal* TOXOPLASMOSIS).ti	52
18	Medline	(Toxoplasma AND (pregn* OR maternal)).ti	366
19	EMBASE	(Toxoplasma AND (pregn* OR maternal)).ti	444