Patricia Bowen Library & Knowledge Service
Email: library.infoservice@chelwest.nhs.uk
Website: http://www.library.wmuh.nhs.uk/wp/library/

West Middlesex University Hospital

Date: 30 January 2020
Sources Searched: Medline, Embase, CINAHL.

Crohn's Disease and Mode of Childbirth

See full search strategy

1. Defining the Most Appropriate Delivery Mode in Women with Inflammatory Bowel Disease: A Systematic Review.

Author(s): Foulon, Arthur; Dupas, Jean-Louis; Sabbagh, Charles; Chevreau, Julien; Rebibo, Lionel; Brazier, Franck; Bouguen, Guillaume; Gondry, Jean; Fumery, Mathurin

Source: Inflammatory bowel diseases; May 2017; vol. 23 (no. 5); p. 712-720

Publication Date: May 2017

Publication Type(s): Journal Article Review Systematic Review

PubMedID: 28426452

Available at Inflammatory bowel diseases - from Unpaywall

Abstract:INTRODUCTIONHigh cesarean section (CS) rates are observed in patients with inflammatory bowel disease (IBD), but limited data are available to support this decision. We conducted a comprehensive review to evaluate the most appropriate mode of delivery in women with IBD according to disease phenotype and activity, as well as surgical history.MATERIALS AND METHODSWe searched MEDLINE (source PubMed) and international conference abstracts, and included all studies that evaluated digestive outcome after delivery in patients with IBD.RESULTSA total of 41 articles or abstracts were screened, and 18 studies were considered in this review, with sample sizes ranging from 4 to 229 patients and follow-up ranging from 2 months to 7.7 years. Pooled CS rates in patients without Perianal Crohn's disease (PCD), healed PCD or active PCD, were 27%, 43%, and 46%, respectively. Regarding the median rate of new PCD (3.0% [IQR, 1.5-11.5] versus 6.5% [0-19.7]) or PCD recurrence (13.5% [3.2-32.7] versus 45% [0-58]), no increase was observed in patients with vaginal delivery compared to CS, but for patients with an active disease, worsening of symptoms was noted in two-thirds of cases. Episiotomy, perianal tears, and instrumental delivery did not influence the incidence of PCD. In patients with ileal pouch anal anastomosis, uncomplicated vaginal delivery seemed to moderately influence pouch function, with no significant difference in terms of overall continence, daytime, or night-time stool frequency, or incontinence. However, these parameters seemed negatively impacted by a complicated vaginal delivery.CONCLUSIONSNew long-term data from well-designed studies are needed, but our review suggests that systematic CS in patients suffering from IBD should probably be limited to women at risk of perineal tears and obstetric injuries, with an active PCD, or with ileal pouch anal anastomosis.

Database: Medline

2. Incidence and Predictors of Flares in the Postpartum Year Among Women With Inflammatory Bowel Disease.

Author(s): Yu, Amy; Friedman, Sonia; Ananthakrishnan, Ashwin N

Source: Inflammatory bowel diseases; Jan 2020

Publication Date: Jan 2020

Publication Type(s): Journal Article

PubMedID: 31895410

Abstract:BACKGROUNDThe postpartum period is marked by physiological and psychological stresses that may impact activity in inflammatory bowel disease. The predictors and outcomes of disease activity during this period have not been well characterized.METHODSWe performed a retrospective review of inflammatory bowel disease patients who underwent successful pregnancy and live birth at 2 referral institutions. Data on patient and disease factors including disease activity before and during pregnancy were abstracted from the medical records. We noted whether therapy was dose-reduced or stopped during pregnancy at each trimester and after delivery. Multivariable logistic regression of independent predictors of postpartum flare was performed, adjusting for relevant covariates.RESULTSWe identified a total of 206 eligible women (mean age, 33.2 years). Of these, 97 (47%) had a diagnosis of Crohn's disease, whereas the remainder had ulcerative colitis. Nearly half the women delivered vaginally (53%), and the rest delivered by Caesarean section (47%). In the entire cohort, 65 (31.6%) experienced a postpartum flare within the year after delivery. In multivariable analysis, development of a postpartum flare was predicted by disease activity during the third trimester (odds ratio [OR], 6.27; 95% confidence interval [CI], 2.81-17.27), therapy de-escalation during pregnancy (OR, 3.00; 95% CI, 1.03-8.68), and therapy de-escalation after pregnancy (OR, 4.43; 95% CI, 1.55-12.65). Postpartum disease flare was not related to disease type, duration of disease, or mode of childbirth.CONCLUSIONS One-third of women with inflammatory bowel disease may experience disease flare during the postpartum year. Continued optimization of therapy before, during, and after pregnancy is essential to prevent this morbidity.

Database: Medline

3. Updates in the management of inflammatory bowel disease during pregnancy.

Author(s): Bell, Sally J; Flanagan, Emma K

Source: The Medical journal of Australia; Apr 2019; vol. 210 (no. 6); p. 276-280

Publication Date: Apr 2019

Publication Type(s): Journal Article Review

PubMedID: 30905081

Available at The Medical journal of Australia - from Wiley Online Library Science , Technology and Medicine Collection 2019

Abstract: The best pregnancy outcomes for women with inflammatory bowel disease (IBD) occur when their disease is in remission at conception and remains in remission throughout pregnancy. Active IBD can lead to adverse pregnancy outcomes, including spontaneous abortion, pre-term birth and low birthweight. The majority of women with IBD who are taking maintenance medication will require medication throughout the pregnancy to prevent disease relapse. Most IBD medications are considered safe in pregnancy and breastfeeding, except for methotrexate. Pre-conception counselling should be arranged with the patient's IBD specialist and should include discussions regarding the importance of optimising disease control before and during pregnancy as well as the medication management plan for pregnancy. Patients with IBD should be reassured that their fertility is normal when the disease is quiescent, with the exception of women who have had pelvic surgery. IBD activity should be carefully monitored during pregnancy using non-invasive techniques, and disease flares during pregnancy should be treated promptly with escalation of therapy in consultation with the patient's IBD specialist. Mode of delivery should be determined by obstetric need; however, caesarean delivery is preferred for women with a history of ileal pouch anal anastomosis surgery or active perianal Crohn's disease.

Database: Medline

4. Predictors of Cesarean Delivery in Pregnant Women with Inflammatory Bowel Disease.

Author(s): Sharaf, Amy A; Nguyen, Geoffrey C

Source: Journal of the Canadian Association of Gastroenterology; Jun 2018; vol. 1 (no. 2); p. 76-81

Publication Date: Jun 2018

Publication Type(s): Journal Article

PubMedID: 31294403

Available at Journal of the Canadian Association of Gastroenterology - from Oxford Journals - Open Access

Available at Journal of the Canadian Association of Gastroenterology - from Unpaywall

Abstract: AimPregnant women with Crohn's disease (CD) or ulcerative colitis (UC) are likelier to undergo Cesarean delivery than women without IBD. Active perianal disease is the only IBD-related indication for Cesarean delivery. We sought to identify clinical factors contributing to these high rates.MethodsWe conducted a retrospective cohort study of 369 pregnant women with IBD who delivered at our institution between 2006 and 2014. We used logistic regression to identify clinical predictors of Cesarean delivery.ResultsThe Cesarean delivery rate among women with CD and UC were 52% and 48%, respectively. Thirty of Cesarean deliveries (54%) in CD and UC patients were performed emergently, respectively. Among those with CD, the strongest predictors of Cesarean delivery were history of perianal disease (adjusted odds ratio [aOR), 13.6; 95% CI: 3.87-47.5) and prior Cesarean delivery (aOR, 22.2; 95% CI: 6.16-80.2). Among women who underwent Cesarean delivery because of perianal disease, only 42% had active perianal symptoms during pregnancy. In UC patients, history of colectomy was a predictor of Cesarean delivery (aOR, 5.08; 95% CI: 1.95-

13.2). Cesarean delivery increased the postpartum length of stay by 1.1 days on average for both CD and UC patients, reflecting a 57% and 90% increase over vaginal delivery after adjusting for confounders.ConclusionsThe decision to perform Cesarean delivery for women with IBD is complex involving IBD-related and obstetric factors and is ideally made by a multidisciplinary team that includes input from a gastroenterologist and obstetrician.

Database: Medline

5. Risk of anal incontinence in women with inflammatory bowel diseases after delivery.

Author(s): Kozeluhova, J; Kotyza, J; Balihar, K; Krcma, M; Cedikova, M; Karbanova, J; Kalis, V; Janska, E; Matejovic, M

Source: Bratislavske lekarske listy; 2017; vol. 118 (no. 6); p. 328-333

Publication Date: 2017

Publication Type(s): Journal Article

PubMedID: 28664741

Available at Bratislavske lekarske listy - from Unpaywall

Abstract:AIMThe aim of our prospective study was to evaluate the development of postpartum anal incontinence in patients with inflammatory bowel disease (IBD) compared to healthy women.MATERIAL AND METHODSPatients with IBD and healthy controls enrolled in the study from January 1st 2013 to November 30th 2016 and filled in the anal incontinence questionnaire in the beginning of pregnancy and after vaginal delivery. The results were statistically processed using suitable tests.RESULTSA total of 57 women were enrolled, 17 (29.8 %) with ulcerative colitis, 23 (40.4 %) with Crohn's disease, and 17 (29.8 %) healthy controls. Incidence of postpartum anal incontinence is comparable across all groups; there was no statistically significant difference between the IBD and control groups (Kruskal-Wallis test by ranks with Dunn correction, non-significant). Postpartum anal incontinence was strongly correlated with the extent of perineal injury ($r = 0.80$; $p < 0.0001$; Pearson's linear correlation).CONCLUSIONSWomen with inflammatory bowel disease in remission do not exhibit higher incidence of postpartum anal incontinence (PPAI) compared to healthy controls; the key correlate of PPAI appears to be the extent of obstetric injury, consistently across all study groups. These results suggest that concerns about postpartum anal incontinence development should not be an indication for Caesarean section in IBD patients (Tab. 6, Fig. 1, Ref. 34).

Database: Medline

6. Indications for Mode of Delivery in Pregnant Women with Inflammatory Bowel Disease.

Author(s): Burke, Kristin E; Haviland, Miriam J; Hacker, Michele R; Shainker, Scott A; Cheifetz, Adam S

Source: Inflammatory bowel diseases; May 2017; vol. 23 (no. 5); p. 721-726

Publication Date: May 2017

Publication Type(s): Evaluation Study Journal Article

PubMedID: 28426453

Abstract:BACKGROUNDReasons for the increased incidence of cesarean delivery among women with inflammatory bowel disease remain unclear. We assessed cesarean delivery incidence and factors influencing mode of delivery in women with inflammatory bowel disease.METHODSWe performed a 10-year retrospective cohort study of nulliparous women who delivered a singleton infant at our institution. We compared the risk of each mode of delivery in women with Crohn's disease and ulcerative colitis with women without inflammatory bowel disease. We assessed mode of delivery indications for patients with inflammatory bowel disease and whether cesarean deliveries were planned.RESULTSThe overall incidence of cesarean delivery among women with Crohn's disease (24/59; 40.7%) was similar to that among women without inflammatory bowel disease (7868/21,805; 36.1%) (risk ratio 1.1 [95% confidence interval, 0.83, 1.5]; P = 0.46), but was increased in the subgroups with active and inactive perianal disease (risk ratio 2.3; P < 0.01). Women with ulcerative colitis had a 1.8-fold increased relative risk of cesarean delivery (41/65; 63.1%) (95% confidence interval, 1.5, 2.1; P < 0.01), with highest incidence in patients with ileal pouch-anal anastomosis. Forty-nine percent of ulcerative colitis and 66.7% of Crohn's disease cesarean deliveries were unplanned, with only 1 unplanned delivery performed for active inflammatory bowel disease. Most unplanned deliveries were for arrest of descent/dilation and nonreassuring fetal heart tracings. Seventy-five percent of planned cesarean deliveries were for inflammatory bowel disease-related indications.CONCLUSIONSWomen with ulcerative colitis and perianal Crohn's disease have an increased incidence of cesarean delivery. At least half of cesarean deliveries are unplanned.

Database: Medline

7. Factors Associated with Fecal Incontinence in Women of Childbearing Age with Crohn's Disease.

Author(s): Brochard, Charlène; Siproudhis, Laurent; Levêque, Jean; Grouin, Amélie; Mallet, Anne-Laure; Bretagne, Jean-François; Ropert, Alain; Bouguen, Guillaume

Source: Inflammatory bowel diseases; May 2017; vol. 23 (no. 5); p. 775-780

Publication Date: May 2017

Publication Type(s): Journal Article

PubMedID: 28394805

Abstract:BACKGROUNDFecal incontinence is common in women with Crohn's disease, but little is known about the impact of childbirth, perianal Crohn's disease, and past surgical history on fecal incontinence.METHODSSelf-administered questionnaires were mailed to consecutive women referred to a tertiary gastroenterology centre with a focus on fecal incontinence and childbirth. These data were cross-referenced with a prospective database of the same patients' own Crohn's disease histories. Fecal incontinence was defined as a Cleveland Clinic Incontinence Score ≥5. Factors associated with fecal incontinence were analyzed.RESULTSA total of 173 patients were assessed, including 113 parous women. The prevalence of fecal incontinence was 37.5% (95% CI, 30.7-45.0). The disease duration, a history of anal surgery for fistula, the number of childbirths per woman and Crohn's activity were all independently associated with fecal incontinence in a multivariate analysis model. Specifically, among the group of parous women, fecal incontinence was associated with prior abdominal surgery, prior anal surgery, and Crohn's activity. The mode of delivery was not statistically associated with fecal incontinence.CONCLUSIONSFecal incontinence is a significant complaint in at least one-third of women of childbearing age with Crohn's disease. Patients'disease and treatment histories seem to have a comparable effect to their childbirth history concerning the presence of fecal incontinence. Both physicians and surgeons who are involved in the management of Crohn's disease need to keep this in mind.

Database: Medline

8. Management of Inflammatory Bowel Disease During Pregnancy

Author(s): Bar-Gil Shitrit A.; Ben Ya'acov A.; Goldin E.; Grisaru-Granovsky S.

Source: Digestive Diseases and Sciences; Aug 2016; vol. 61 (no. 8); p. 2194-2204

Publication Date: Aug 2016

Publication Type(s): Review

PubMedID: 27068171

Abstract: Inflammatory bowel disease (IBD) usually affects women during their reproductive years and many concerns arise among these young patients. Pre-pregnancy consultation with a multi-disciplinary team is very important. The team should make patients aware of the critical importance of ensuring that conception occurs during a period of disease remission. Conception during an IBD flare-up results in disease activity or even exacerbates disease in two-thirds of women. Exacerbation of the disease is associated with increased frequency of maternal and fetal complications. Drug therapy constitutes a considerable source of patient anxiety but most drugs used for treating IBD are considered safe. Therefore, continuing pharmacological therapy during pregnancy is necessary to maintain disease control. Optimization of pre-conception nutritional status and smoking cessation are also emphasized. The general guideline for most patients, except for active perianal disease patients, is to aim for vaginal delivery in the absence of obstetric contraindications. Consistent, ongoing follow-up, as detailed in this review, should allay the anxieties and fears surrounding continuing immunosuppressive drugs during pregnancy, allowing each patient to attain the optimal conditions for achieving her goal of holding a healthy baby.

Database: EMBASE

9. Pregnancy and the Patient with Inflammatory Bowel Disease: Fertility, Treatment, Delivery, and Complications

Author(s): McConnell R.A.; Mahadevan U.

Source: Gastroenterology Clinics of North America; Jun 2016; vol. 45 (no. 2); p. 285-301

Publication Date: Jun 2016

Publication Type(s): Review

PubMedID: 27261899

Abstract: For many women with inflammatory bowel disease (IBD), the illness coincides with their childbearing years. IBD increases the risk of pregnancy complications and adverse pregnancy outcomes. The multidisciplinary care team should emphasize the importance of medication adherence to achieve preconception disease control and maintain corticosteroid-free remission throughout pregnancy. Medication adjustments to reduce fetal exposure may be considered on an individualized basis in quiescent disease; however, any benefits of such adjustments remain theoretic and there is risk of worsening disease activity. Mode of delivery is determined by obstetric indications, except for women with active perianal disease who should consider cesarean delivery.

Database: EMBASE

10. Operative vaginal delivery and higher order perineal lacerations do not result in worsening of disease in women with inflammatory bowel disease

Author(s): Bonthala N.; Wong M.; Kilpatrick S.; Melmed G.Y.

Source: Gastroenterology; Apr 2016; vol. 150 (no. 4)

Publication Date: Apr 2016

Publication Type(s): Conference Abstract

Abstract: Background Women with inflammatory bowel disease (IBD) are often advised to undergo cesarean delivery and avoid operative vaginal delivery (use of forceps or vacuum) due to perceived increased risk of anal sphincter dysfunction from perineal lacerations despite a paucity of formal data. Our aim is to evaluate whether operative vaginal delivery (OVD) or 3rd/4th degree perineal laceration predicts a worsening of disease in women with IBD. Methods This was a retrospective cohort study of all deliveries from 1/1/2011 to 9/30/2015 at an academic tertiary care medical center in a major metropolitan area in the United States. Women were identified using ICD-9 codes for IBD and CPT codes for deliveries. Charts were reviewed for disease subtype (Crohn's disease [CD] or ulcerative colitis [UC]), medication use, surgery, disease course and adverse outcomes during pregnancy and in the first year after delivery. Obstetric data included maternal demographics, mode of delivery and degree of perineal lacerations. Results A total of 31,207 deliveries were identified of which 105 were in women previously diagnosed with IBD. Consistent with prior studies, cesarean delivery rates were higher in those with IBD compared to all women delivering in this time period (46% vs. 35%, p=0.03). Rates of OVD were equal in those with IBD compared to all women delivering in this time period (7.6% vs. 6.8%, p=0.88). Women with IBD who underwent cesarean delivery were more likely to have a diagnosis of CD, have higher rates of biologic use, and prior surgeries compared to NSVD and OVD (all $p < 0.05$). Women with CD who underwent cesarean delivery did not have more baseline perianal or stricturing/ penetrating disease compared to NSVD ($p > 0.05$). None of the women with CD undergoing OVD had a history of perianal disease. There was no difference between groups in other baseline maternal characteristics, duration of IBD diagnosis, or steroid use during pregnancy (Table 1). Among IBD patients who underwent NSVD, 20% had no lacerations, 77.5% had 1st/2nd degree, 2% had 3rd degree and none had 4th degree. These values were not statistically different from those who underwent an OVD. There was no statistically significant difference in postpartum IBD flares, worsening or new perianal disease, or need for surgery in the year after delivery among all modes of delivery (all $p > 0.5$) or in those who had 3rd/4th degree perineal lacerations. Conclusions Our study is the first to evaluate disease outcomes in women with IBD who underwent OVD or sustained higher order lacerations. There does not appear to be a higher risk for postpartum flares, new/worsening perianal disease or increased need for surgery in the year after delivery in those who deliver via NSVD or OVD or in those sustaining 3rd/4th degree lacerations. In carefully selected patients, vaginal delivery may be advocated over cesarean delivery. (Table Presented).

Database: EMBASE

11. Treatment of the Pregnant Patient with Inflammatory Bowel Disease

Author(s): Winter R.; Friedman S.; Norgard B.M.

Source: Inflammatory Bowel Diseases; Mar 2016; vol. 22 (no. 3); p. 733-744

Publication Date: Mar 2016

Publication Type(s): Review

PubMedID: 26658216

Abstract: Research regarding fertility, medication safety, and pregnancy outcomes is increasing, but there are still many knowledge gaps in these areas. Women with ulcerative colitis and Crohn's disease may have decreased fertility because of voluntary childlessness and inflammatory bowel disease (IBD) surgery, and women with Crohn's disease may also have decreased ovarian reserve. Initial studies show that in vitro fertilization is a viable option, and laparoscopic ileoanal pouch anastomosis surgery improves fertility rates. Additional research is needed on the effect of disease activity on fertility and on the rates of pregnancy loss and ectopic pregnancies. We do not know how to reliably measure disease activity during pregnancy or the effect of pregnancy on the microbiome. Although immunomodulators and anti-tumor necrosis factor medications are relatively safe during pregnancy, the long-term effects of these medications on the child are unknown. The recommended mode of delivery is still debated, especially for women after ileoanal pouch anastomosis. There are multiple studies on the relative safety of immunomodulators and anti-tumor necrosis factor medications during pregnancy, and we know how to safely treat a pregnant patient with a disease flare. The best way to manage women with IBD who are pregnant or contemplating pregnancy is a multidisciplinary approach. Team members often include a gastroenterologist, a high-risk obstetrician, an infertility specialist, a colorectal surgeon, and a pediatrician with experience in caring for children of mothers with IBD. By integrating expertise from these disciplines, women with even very complex IBD should be able to have a healthy pregnancy and delivery.

Database: EMBASE

12. Perianal Crohn's disease results in fewer pregnancies but is not exacerbated by vaginal delivery.

Author(s): Grouin, Amélie; Brochard, Charlène; Siproudhis, Laurent; Leveque, Jean; Bretagne, Jean-François; Poulain, Patrice; Bouguen, Guillaume

Source: Digestive and liver disease : official journal of the Italian Society of Gastroenterology and the Italian Association for the Study of the Liver; Dec 2015; vol. 47 (no. 12); p. 1021-1026

Publication Date: Dec 2015

Publication Type(s): Journal Article

PubMedID: 26342947

Abstract:BACKGROUNDDespite a high prevalence of Crohn's disease in women of childbearing age, disease-related factors that may impact fertility and perianal Crohn's disease after delivery remain unclear.METHODSSelf-administered questionnaires related to childbirth were completed by women with Crohn's disease referred to a single gastroenterology unit. A survival analysis was performed for statistical purposes.RESULTSA total of 184 patients were assessed, including 63 nulliparous women. The cumulative probabilities of having a child were 30%, 51% and 72% at the ages of 25, 30 and 35 years, respectively. Women with colonic disease, prior abdominal surgery and perianal disease were less likely to experience childbirth. After a median follow-up of 165 weeks post-delivery, the cumulative probabilities of fistulizing perianal Crohn's disease occurrence were 8%, 12% and 21% at 1, 2 and 5 years following childbirth, respectively. Contrary to a prior history of perianal Crohn's disease and colonic location, mode of delivery was not associated with perianal fistula. An episiotomy in the group of women with prior anal lesions did not result in a higher rate of fistula recurrence.CONCLUSIONPerianal Crohn's disease is associated with fewer pregnancies, however perianal fistulas were less affected by obstetric events than their own natural history.

Database: Medline

13. Mode of childbirth and long-term outcomes in women with inflammatory bowel diseases.

Author(s): Ananthakrishnan, Ashwin N; Cheng, Alice; Cagan, Andrew; Cai, Tianxi; Gainer, Vivian S; Shaw, Stanley Y; Churchill, Susanne; Karlson, Elizabeth W; Murphy, Shawn N; Kohane, Isaac; Liao, Katherine P

Source: Digestive diseases and sciences; Feb 2015; vol. 60 (no. 2); p. 471-477

Publication Date: Feb 2015

Publication Type(s): Research Support, Non-u.s. Gov't Research Support, N.i.h., Extramural Comparative Study Multicenter Study Journal Article

PubMedID: 25213079

Abstract:INTRODUCTIONInflammatory bowel diseases [IBD; Crohn's disease (CD), ulcerative colitis] often affect women in their reproductive years. Few studies have analyzed the impact of mode of childbirth on long-term IBD outcomes.METHODSWe used a multi-institutional IBD cohort to identify all women in the reproductive age-group with a diagnosis of IBD prior to pregnancy. We identified the occurrence of a new diagnosis code for perianal complications, IBD-related hospitalization and surgery, and initiation of medical therapy after either a vaginal delivery or caesarean section (CS). Cox proportional hazards models adjusting for potential confounders were used to estimate independent effect of mode of childbirth on IBD outcomes.RESULTSOur cohort included 360 women with IBD (161 CS). Women in the CS group were likely to be older and more likely to have complicated disease behavior prior to pregnancy. During follow-up, there was no difference in the likelihood of IBD-related surgery (multivariate hazard ratio 1.75, 95 % confidence interval (CI) 0.40-7.75), IBD-related hospitalization (HR 1.39), initiation of immunomodulator therapy (HR 1.45), or anti-TNF therapy (HR 1.11). Among the 133 CD pregnancies with no prior perianal disease, we found no excess risk of subsequent new diagnosis perianal fistulae with vaginal delivery compared to CS (HR 0.19, 95 % CI 0.04-1.05).CONCLUSIONSMode of delivery did not influence natural history of IBD. In our cohort, vaginal delivery was not associated with increased risk of subsequent perianal disease in women with CD.

Database: Medline

14. Vaginal delivery is not associated with fecal incontinence in IBD women

Author(s): Kanis S.; Van Der Woude C.

Source: Journal of Crohn's and Colitis; Feb 2015; vol. 9

Publication Date: Feb 2015

Publication Type(s): Conference Abstract

Abstract: Background: The best mode of delivery for pregnant women with inflammatory bowel disease (IBD)remains a continuing debate amongst physicians. Because patient reported outcomes (PRO) are increasingly included in the management of IBD patients the aim of this study was to investigate PRO on the influence of vaginal delivery (VD) on fecal incontinence (FI) in IBD women. Method(s): We conducted a PRO study on FI and distributed an online survey amongst all members of the Dutch Crohn's and colitis organization (CCUVN). FI was defined as sometimes, weekly or daily involuntary loss of liquid or solid stool. To assess FI complaints we used a validated score (Vaizey incontinence score). This scale has a minimum score of 0 (perfect continence) and a maximum score of 24 (totally incontinent). Result(s): In total 343 women (211 CD(61.5%), 123UC(35.9%), 9IBDU(2.6%)) responded (278 responders from a research panel consisting of 443 IBD women, 65 through social media). In total 174(51.2%) females were childless, 136(40.0%)had a VD, 14(4.1%) had both a VD and caesarian section (CS), 16(4.7%)only CS (3 unknown). Mean age was 41,8 years(SD 13). Median follow up after last delivery was 16 years(IQR 5.5-25.4). In total 73 females(24,0%)never had FI complaints, 89(29,2%) seldom, 91(29,8%) sometimes, 27(8,9%) weekly and 24(8,1%) daily (35 had a stoma, 5 unknown). There were 213(70.0%) premenopausal and 91(30.0%) postmenopausal women (39 did not answer this question). Sixty- one women had perianal fistulizing disease of which 24(39.3%)had one or more VD. The overall median Vaizey score was 7(IQR 5-10). There was no difference in Vaizey score between CD and UC/IBDU. Vaizey score was higher in women with VD (median 8, IQR: 5-11) compared to women that never had a VD (median7, IQR: 4-9)(p=0.02). The Vaizey score was also higher in postmenopausal women (median 8, IQR:6-11) compared to premenopausal women (median 6, IQR4-9) (p=0.001). VD was associated with FI (cOR 1.91, 95%CI: 1,21-3.026), correction for menopause and perianal fistulizing disease showed no independent association with VD (aOR 1.58, 95%CI: 0.92-2.73). Menopause had an association with FI (cOR 2.38, 95%CI: 1.40-4.10), also after correction for VD and perianal fistulizing disease (aOR 2,03, 95%CI 1.12-3.69). Perianal fistulizing disease was not associated with FI. Women with children experience FI more often after menopause (66.1%) compared to before (45.9%)(p=0.03). Childless women also experienced FI more often after menopause (46.2%) compared to premenopausal women (33.3%) but this was not statistically significant (p=0.26). Conclusion(s): This study shows that FI complaints in IBD women are not significantly associated with a vaginal delivery.

Database: EMBASE

15. Mode of childbirth and long-term outcomes in women with inflammatory bowel diseases ACG governors award for excellence in clinical research

Author(s): Ananthakrishnan A.; Shaw S.; Murphy S.; Cai T.; Karlsin E.; Kohane I.; Liao K.; Cagan A.; Gainer V.; Churchill S.

Source: American Journal of Gastroenterology; Oct 2014; vol. 109

Publication Date: Oct 2014

Publication Type(s): Conference Abstract

Available at The American journal of gastroenterology - from Unpaywall

Abstract: Introduction: Inflammatory bowel diseases (IBD) often affect women in the reproductive age group. While several prior studies have examined the effect of underlying IBD on pregnancy and neonatal outcomes, few have analyzed the impact of mode of childbirth on long-term IBD outcomes. In particular, whether vaginal delivery is associated with increased risk of subsequent perianal involvement in Crohn's disease (CD) is an important clinical question that has not been addressed. Method(s): We used a multi-institutional IBD cohort to identify all women in the reproductive age group with a diagnosis of IBD prior to pregnancy. Mode of delivery was stratified into vaginal delivery or Caesarean section (CS). We identified the occurrence of a new diagnosis code for perianal fistulae or abscess, IBD-related hospitalization, and surgery over a median follow-up of 4 years after delivery. To account for bias in selection of mode of delivery, we developed a propensity score adjusted model. Cox proportional hazards models adjusting for potential confounders were used to estimate independent effect of mode of delivery. Result(s): Our cohort included 360 women with IBD, among whom 161 had undergone CS (45%). Women in the CS group were likely to be older (33.5 vs. 32.1 years) and were more likely to have prior perianal disease or complicated disease behavior. There was no difference in medical therapy prior to pregnancy between both groups. During follow-up, 3% of the vaginal delivery group and 7% of the CS group required an IBD-related surgery (multivariate hazard ratio [HR] 1.75; 95% confidence interval [CI] 0.40-7.75). There was no difference in the likelihood of a subsequent IBD-related hospitalization (HR 1.39; 95% CI 0.98-1.96), initiation of immunomodulator therapy (HR 1.45; 95% CI 0.82-2.57), or anti-TNF therapy (HR 1.11; 95% CI 0.44-2.77) among women who were non-users at the time of the index pregnancy. Among the 133 CD pregnancies with no prior perianal disease, we found no excess risk of subsequent new diagnosis code for perianal fistulae with vaginal delivery compared to CS (HR 0.19; 95% CI 0.04-1.05). Conclusion(s): Mode of delivery was not associated with subsequent hospitalization, surgery, or initiation of immunosuppressive or anti-TNF therapy in either Crohn's disease or ulcerative colitis. In our cohort, vaginal delivery was not associated with increased risk of subsequent perianal disease in women with Crohn's disease.

Database: EMBASE

16. Impact of mode of delivery on outcomes in patients with perianal Crohn's disease.

Author(s): Cheng, Alice G; Oxford, Emily C; Sauk, Jenny; Nguyen, Deanna D; Yajnik, Vijay; Friedman, Sonia; Ananthakrishnan, Ashwin N

Source: Inflammatory bowel diseases; Aug 2014; vol. 20 (no. 8); p. 1391-1398

Publication Date: Aug 2014

Publication Type(s): Research Support, N.i.h., Extramural Comparative Study Multicenter Study Journal Article

PubMedID: 24918322

Abstract:BACKGROUNDCrohn's disease (CD) often affects women during the reproductive years. Although several studies have examined the impact of pregnancy on luminal disease, limited literature exists in those with perianal CD. Decision regarding mode of delivery is a unique challenge in such patients due to concerns regarding the effect of pelvic floor trauma during delivery on preexisting perianal involvement.METHODSWe performed a retrospective chart review of patients with CD with established perianal disease undergoing either vaginal delivery or caesarean section (C-section) at our institutions. We examined the occurrence of symptomatic perianal disease flares within 5 years after delivery in such women compared with nonpregnant CD controls. We also compared the occurrence of such flares between the 2 modes of delivery in women with established perianal CD.RESULTSWe identified 61 pregnant patients with CD with established perianal disease (11 vaginal delivery, 50 through C-section) and 61 nonpregnant CD controls with perianal disease. One-third of the C-sections were primarily for obstetric indications. Six of the vaginal deliveries were complicated. Approximately, 36% of cases had a symptomatic perianal flare within 1 year after delivery. This was similar across both modes of delivery (P = 0.53) and similar to nonpregnant patients with CD. There was no difference in the rates of perianal surgical intervention or luminal disease flares in our population based on mode of delivery or between pregnant patients with CD and nonpregnant CD controls.CONCLUSIONSWe observed no difference in risk of symptomatic perianal flares in patients with established perianal CD delivering vaginally or through C-section.

Database: Medline

17. Impact of inflammatory bowel disease on mode of child delivery

Author(s): Burke K.E.; Haviland M.J.; Hacker M.R.; Shah S.; Cheifetz A.S.

Source: Gastroenterology; May 2014; vol. 146 (no. 5)

Publication Date: May 2014

Publication Type(s): Conference Abstract

Abstract: Background: Inflammatory bowel disease (IBD) affects many women of reproductive age, making the interaction of this disease with pregnancy and childbirth an important consideration. Patients with IBD have been shown to have a higher incidence of cesarean section (CS) compared to women without IBD, but the driving factors behind this remain unclear. We sought to determine the incidence of CS in patients with ulcerative colitis (UC) and Crohn's disease (CD) compared to the general population, and assess the factors that impact the mode of delivery in nulliparous women with IBD. Method(s): We performed a retrospective cohort study of all nulliparous women who delivered a singleton infant at our medical center from 2003 through 2013, and identified women with IBD (ICD9 556.x and 555.x). Baseline demographics, comorbidities, pregnancy complications, and disease activity before, during and after pregnancy were noted. Log-binomial regression was performed to calculate the risk ratio (RR) and 95% confidence interval (CI) for mode of delivery for CD and UC patients. Chart review was also performed for documented indication for mode of delivery. Indications were categorized as physician (GI or obstetrician) recommendation, obstetric indication (complication of labor, malpresentation, macrosomia, etc.), and patient preference. Result(s): Of the 21,671 nulliparous women who delivered singleton babies, 59 had CD and 65 had UC. Women with CD and UC were significantly more likely to have a maternalfetal medicine provider as compared to women without IBD (P<0.0001), but there were otherwise no demographic differences among groups. The risk of CS among women with UC (63.1%) was significantly higher than that among women without IBD (36.0%; RR: 1.8; 95% CI: 1.5-2.1). Among women with UC, the presence of ileal pouch-anal anastomosis significantly increased the risk of CS (RR: 1.8, 95% CI: 1.4-2.3; P <0.0001). Women with CD had a similar incidence of CS compared to the general population (40.7%; RR: 1.1; 95% CI: 0.83-1.5). However, the subset of CD patients with perianal disease had a significantly elevated risk of CS (RR: 2.7; 95% CI: 1.6-4.6). Active disease before and during pregnancy and at time of delivery also significantly increased the risk of CS among women with CD, but did not alter the risk of CS in patients with UC (Table 1). 29.2% of UC patients and 25.0% of CD patients that underwent CS did so electively at physician recommendation based on IBD history and disease activity. 58.5% of UC patients and 66.7% of CD patients required CS for an obstetric indication. Conclusion(s): The risk of CS is higher in patients with UC and perianal CD. Physician recommendation and obstetric indications are the main indications for CS in these populations. Active disease at any time surrounding pregnancy increases risk of CS in patients with CD. (Table Presented).

Database: EMBASE

18. Crohn's disease and pregnancy: The impact of perianal disease on delivery methods and complications

Author(s): Hatch Q.; Johnson E.K.; Steele S.R.; Champagne B.J.; Maykel J.A.; Davis B.R.; Bleier J.S.; Francone T.D.

Source: Diseases of the Colon and Rectum; Feb 2014; vol. 57 (no. 2); p. 174-178

Publication Date: Feb 2014

Publication Type(s): Article

PubMedID: 24401878

Abstract: Background: The optimal delivery method in patients with Crohn's disease is unknown, and there is no largescale evidence on which to base decisions. Objective(s): The aim of this study was to compare delivery methods and outcomes in patients with and without Crohn's disease. Design And Patients: The Nationwide Inpatient Sample and International Classification of Diseases, Ninth Revision codes were used to identify childbirth deliveries. Patients were stratified by the presence or absence of Crohn's disease and perianal disease (anorectal fistula or abscess, rectovaginal fistula, anal fissure, and anal stenosis). Setting(s): A large population-cohort database was used for the analysis. Main Outcome Measure(s): The primary outcomes measured were cesarean delivery and perineal lacerations. Result(s): Of 6,794,787 pregnant women who delivered, 2882 had a diagnosis of Crohn's disease. Rates of cesarean delivery were higher in patients who had Crohn's disease with (83.1%) and without (42.8%) perianal disease in comparison with patients who did not have Crohn's disease with (38.9%) and without (25.6%) perianal disease ($p < 0.001$). Rates of 4th degree perineal lacerations were similar between patients who had or did not have Crohn's disease without perianal disease (1.4% vs 1.3%), but these rates increased significantly in patients with perianal disease (12.3%, $p < 0.001$). On multivariate analysis, perianal disease (OR, 10.9; 95% CI, 8.3-4.1; $p < 0.001$) and smoking (OR, 1.6; 95% CI, 1.5-1.7; $p < 0.001$) were independently associated with higher rates of 4th degree laceration. Crohn's disease was not independently associated with 4th degree laceration. Limitation(s): This was a retrospective study with the inherent limitations of large databases. Conclusion(s): Patients with Crohn's disease have higher rates of cesarean delivery. Perianal disease predicts severe perineal laceration independent of the presence of Crohn's disease. In the absence of perianal disease, the method of delivery in women with Crohn's disease should be predicated on obstetric indication. © The ASCRS 2014.

Database: EMBASE

19. Indications for elective caesarean section in IBD: A population-based study

Author(s): Coward S.; Seow C.; Kaplan G.; Proulx M.-C.; Panaccione R.; Ghosh S.; Leung Y.

Source: American Journal of Gastroenterology; Oct 2013; vol. 108

Publication Date: Oct 2013

Publication Type(s): Conference Abstract

Available at American Journal of Gastroenterology - from Unpaywall

Abstract: Purpose: Women with Inflammatory Bowel Disease (IBD) are at a higher risk of caesarean section; they undergo c-sections at a higher rate than non-IBD patients. The purpose of this study is to identify all indications for elective caesarean section (ECS) in a population-based cohort of pregnant women with IBD. Method(s): We included all women in the Calgary Health Zone, >=18 years old with IBD, who were admitted to an acute care facility between January 1, 2006 and December 31, 2009. These patients were identified with the Data Integration, Management, and Reporting discharge abstract database that had a diagnosis of IBD (CD: ICD-9-CM 555.X, ICD-10-CA K50.X; UC: ICD-9-CM 556.X, ICD- 10-CA K51.X), and coded for a pregnancy delivery (ICD-9-CM 630.X - 679.X, ICD-10-CA O00.X - O99.X). All patients underwent a comprehensive chart review (n=127) to validate diagnosis and pregnancy outcomes. ECS was pre-defined as a caesarean section that was planned prior to the onset of symptoms of labor. Indications for ECS were recorded, and an individual could have more than one. A chi-squared test compared indication for ECS between ulcerative colitis (UC) and Crohn's disease (CD). Result(s): There were 34 patients with ECS: 27 CD and 7 UC. See Table 1. We did not observe a statistically significant difference in the indications for ECS between CD and UC patients. Conclusion(s): To our knowledge, this is the first report of the specific indications for ECS utilizing a population-based cohort. ECS were most often done due to previous abdominal surgery, either IBD or pregnancy-related. Given that IBD patients are often on immunomodulators and biologics, a prospective study is underway to capture post-caesarean complications: wound infections, antibiotic use, and extended stay in hospital. (Figure Presented).

Database: EMBASE

20. Long-term impact of both deliveries and Crohn's disease on anoperineal lesions

Author(s): Grouin A.; Leveque J.; Poulain P.; Siproudhis L.; Bretagne J.-F.; Bouguen G.

Source: Journal of Crohn's and Colitis; Feb 2013; vol. 7

Publication Date: Feb 2013

Publication Type(s): Conference Abstract

Available at Journal of Crohn's and Colitis - from Unpaywall

Abstract: Background: Despite a high prevalence of Crohn's disease in young women of childbearing age, individual factors including perianal Crohn's disease (PCD) on the fertility and issue of delivery on the natural history of PCD remains unclear. Method(s): Self-administered questionnaires were sent by mail to 329 consecutive patients of childbearing age who were seen for Crohn's disease between 2000 and 2010 at an academic hospital in France. The cumulative probabilities and associated factors of delivery and the occurrence of PCD after delivery were estimated using survival analysis. Result(s): The response rate of questionnaires was 64% (185 patients) including 63 nulliparous women. The probability of having a delivery was 30%, 51% and 72% at the age of 25, 30 and 35, respectively. Women with a known diagnosis of Crohn's disease at the time of childbearing age (HR = 6.58, 95% CI [3.5 to 13.1], $p < 0.001$) and women with a history of anal abscesses (HR = 4.8, 95% CI [1.2 to 21], $p = 0.03$) were less likely to have been pregnant. In 122 women who underwent at least one delivery (total 240 deliveries), 25 women (20%) had a history of PCD before their first pregnancy. Seventy-four (61%) patients had at least one vaginal delivery requiring 38 (44%)

episiotomies. After a median follow-up of 126 months after delivery [6 438], 46 patients (38%) developed PCD including 20 patients within the first two years. The cumulative probabilities of occurrence of PCD were 7.8% and 22.2% at 1 and 5 years since the last delivery respectively. Episiotomy, instrumental delivery, and vaginal tears were not associated with ocurrence of PCD since the last delivery. Independent predictors of PCD after delivery were a history of PCD before pregnancy (HR = 17.7 [2.3 to 139], p = 0.006), anal fistula (HR = 9.8 [1, 3 97], p = 0.02), relapse of CD during pregnancy (HR = 5.9 [2.4 to 13], p = 0.0002), and cesarean section (HR = 3.5 [9.6 to 85], p = 0.03). Conclusion(s): In this large series of patients, history of PCD is associated with fewer pregnancies and obstetric events did not affect the occurrence of perianal lesions at 1 and 5 years following delivery, which seem to be more influenced by the natural history of Crohn's disease itself.

Database: EMBASE

21. Effect of childbirth on the course of Crohn's disease; results from a retrospective cohort study in the Netherlands

Author(s): Smink M.; Lotgering F.K.; Albers L.; de Jong D.J.

Source: BMC Gastroenterology; Jan 2011; vol. 11

Publication Date: Jan 2011

Publication Type(s): Article

PubMedID: 21269464

Available at BMC gastroenterology - from Unpaywall

Abstract: Background: Pregnant women with Crohn's disease needs proper counselling about the effect of pregnancy and childbirth on their disease. However, Literature about the effect of childbirth on Crohn's disease is limited. This study examined the effect of childbirth on the course of Crohn's disease and especially perianal Crohn's disease. Method(s): This is a retrospective cohort study which was performed in a tertiary level referral hospital in the Netherlands. From the IBD database, female patients aged 18-80 years in 2004 were selected. Data analysis took place in the years 2005 and 2006. Eventually, 114 women with at least one pregnancy after the diagnosis of Crohn's disease were eligible for the study. Differences between groups were analyzed using Wilcoxon Mann Whitney tests and Chi-square analysis with 2 x 2 or 2 x 3 contingency tables. Two-tailed values were used and p values < 0.05 were considered statistically significant. Result(s): 21/114 women (18%) had active luminal disease prior to pregnancy, with significantly more pregnancy related complications compared to women with inactive luminal disease (Odds ratio 2.8; 95% CI 1.0 - 7.4). Caesarean section rate was relatively high (37/114, 32%), especially in patients with perianal disease prior to pregnancy compared to women without perianal disease (Odds ratio 4.6; 95% CI 1.8 - 11.4). Disease progression after childbirth was more frequent in patients with active luminal disease prior to pregnancy compared to inactive luminal disease (Odds ratio 9.7; 95% CI 2.1 - 44.3). Progression of perianal disease seems less frequent after vaginal delivery compared with caesarean section, in both women with prior perianal disease (18% vs. 31%, NS) and without prior perianal disease (5% vs 14%, NS). There were no more fistula-related complications after childbirth in women with an episiotomy or second degree tear. Conclusion(s): A relatively high rate of caesarean sections was observed in women with Crohn's disease, especially in women with perianal disease prior to pregnancy. A protective effect of caesarean section on progression of perianal disease was not observed. However, this must be interpreted carefully due to confounder effect by indication for caesarean section.

Database: EMBASE

22. Mode of delivery and risk of fecal incontinence in women with or without inflammatory bowel disease: questionnaire survey.

Author(s): Ong, J P L; Edwards, G J; Allison, M C

Source: Inflammatory bowel diseases; Nov 2007; vol. 13 (no. 11); p. 1391-1394

Publication Date: Nov 2007

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

PubMedID: 17576117

Available at Inflammatory bowel diseases - from Unpaywall

Abstract:BACKGROUNDElective cesarean section (CS) may be recommended for patients with Crohn's disease and perineal involvement. Little is known about CS rates in parous women with inflammatory bowel disease (IBD), nor the possible long-term impact of vaginal delivery and episiotomy on continence in women with IBD.METHODSQuestionnaires were sent to all 777 regional members of a Colitis and Crohn's Disease patient association. Male members were asked to request their unaffected female spouse/partner to complete the forms in order to give a "control" group for comparison.RESULTSForms were returned by 491 members (response rate 63%). CS had been undertaken for 37 of the 229 parous women with IBD (16%) versus 15 of the 116 without IBD (13%) (chi(2) = 0.62, P = NS). Only 2 women had undergone CS due to IBD. Of the parous women with IBD, 75 (33%) had persisting problems with fecal incontinence, of whom 21 (28%) dated this back to the time of vaginal delivery. By contrast, only 2 (2%) of the parous control group had suffered persisting fecal incontinence following vaginal delivery (chi(2) = 8.27, P < 0.01).CONCLUSIONSPersisting fecal incontinence is reported by a significant minority of parous women with IBD, of whom over one-quarter date this back to vaginal delivery. CS is rarely recommended due to IBD alone. If our findings are confirmed in prospective studies, the threshold for recommending CS may need to be lowered for patients with IBD.

Database: Medline

23. Perinatal outcomes in inflammatory bowel disease

Author(s): Bush M.C.; Patel S.; Lapinski R.H.; Stone J.L.

Source: Journal of Maternal-Fetal and Neonatal Medicine; Apr 2004; vol. 15 (no. 4); p. 237-241

Publication Date: Apr 2004

Publication Type(s): Article

PubMedID: 15280131

Abstract: Objective: To determine whether inflammatory bowel disease (IBD) is associated with increased risk for adverse perinatal outcome. Method(s): A case-control study of 116 singleton pregnancies with IBD compared to 56398 singleton controls delivered between 1986 and 2001. Result(s): Patients with IBD were slightly older (32.8 vs. 30.6 years, p < 0.001), more likely to be Caucasian or Asian than Black or Latino (92% vs. 51%, p < 0.001) and have private health insurance (33% vs. 3%, p < 0.001). IBD was associated with an increased risk for labor induction (32% vs. 24%, p = 0.002), chorioamnionitis (7% vs. 3%, p = 0.04) and Cesarean section (32% vs. 22%, p = 0.007), but there were no differences in neonatal outcomes. Subgroup analysis demonstrated an increased risk for low birth weight (LBW) in the ulcerative colitis group vs. the Crohn's disease group (19% vs. 0%, p = 0.002). Patients with prior surgery for IBD had a lower incidence of LBW (0% vs. 12%, p = 0.03). Flares during pregnancy were associated with an increased risk for preterm delivery (27% vs. 8%, p = 0.02) and LBW (32% vs. 3%, p = 0.003). Conclusion(s): IBD was an independent risk factor for Cesarean section but there was no increase in adverse perinatal outcome. Crohn's disease, prior IBD surgery and quiescent disease were associated with a lower risk for LBW.

Database: EMBASE

24. Perianal Crohn's disease and pregnancy: role of the mode of delivery.

Author(s): Ilnyckyji, A; Blanchard, J F; Rawsthorne, P; Bernstein, C N

Source: The American journal of gastroenterology; Nov 1999; vol. 94 (no. 11); p. 3274-3278

Publication Date: Nov 1999

Publication Type(s): Comparative Study Journal Article

PubMedID: 10566729

Abstract:OBJECTIVEElective cesarean section (CS) is a standard recommendation for pregnant women with perianal Crohn's disease. In this study we examined the mode of delivery for pregnant women with Crohn's disease and assessed the relationship between perianal disease activity and delivery mode.METHODSThe University of Manitoba's Inflammatory Bowel Disease Database, a population-based database, was interfaced with a provincial birth database to compare the mode of delivery for women with Crohn's disease and ulcerative colitis to that of the general population for the years 1985-1995. To describe clinical issues related to perianal Crohn's disease in relation to mode of delivery, data were obtained from a subset of women with Crohn's disease who had given birth between 1985 and 1995 using a standardized questionnaire. Data regarding Crohn's disease and birth history were verified through chart review (93.8%) and corroboration with the personal physician (87.5%).RESULTSThe total and (elective) CS rates were higher for Crohn's disease 20.9% (9.0%), and for UC 20.8% (9.3%) than the general population 15% (5.4%) ($p < 0.01$ for each). Among primiparous women, patients with Crohn's disease and UC were also significantly more likely to have CS than the general population. In the target group of 281 women, 52 had births in the years in question and were contactable. There were 54 vaginal births and 10 sections. Fifteen of 54 vaginal births were predated by perianal disease; 4 of 15 reported active perianal disease at birth; and all reported worsening of perianal symptoms postpartum. Those with inactive perianal disease ($n = 11$) had no relapse of perianal disease in 1 yr of follow-up postpartum. Of 39 vaginal deliveries with no known perianal disease, only 1 ultimately developed perianal disease within 1 yr of postpartum follow-up.CONCLUSIONSWomen with inflammatory bowel disease undergo CS more often compared to the general population. For those with either no history of perianal disease or inactive perianal disease at birth, the risk of perianal disease relapse is very low and does not justify CS. Active perianal disease at time of delivery is an indication for CS.

Database: Medline

Strategy 796843

#	Database	Search term	Results
1	Medline	(crohn*).ti,ab	45195
2	Medline	exp "CROHN DISEASE"/	37981
3	Medline	(1 OR 2)	53779
4	Medline	(cesarean* OR caesarean* OR "c section*").ti,ab	58612
5	Medline	exp "CESAREAN SECTION"/	44169
6	Medline	(4 OR 5)	71450
7	Medline	(vagina* ADJ2 (birth* OR deliver*)).ti,ab	19577
8	Medline	(3 AND 6 AND 7)	18
9	Medline	("mode of delivery").ti,ab	6669
10	Medline	(3 AND 9)	29
11	Medline	("mode of childbirth" OR "mode of birth").ti,ab	368
12	Medline	(3 AND 11)	4
13	EMBASE	(crohn*).ti,ab	76838
14	EMBASE	exp "CROHN DISEASE"/	88430
15	EMBASE	(13 OR 14)	98287
16	EMBASE	(cesarean* OR caesarean* OR "c section*").ti,ab	84072
17	EMBASE	exp "CESAREAN SECTION"/	92907
18	EMBASE	(16 OR 17)	110845
19	EMBASE	(vagina* ADJ2 (birth* OR	30070

		deliver*)).ti,ab	
20	EMBASE	exp "VAGINAL DELIVERY"/	31250
21	EMBASE	(19 OR 20)	41143
22	EMBASE	(15 AND 18 AND 21)	90
23	EMBASE	("mode of delivery").ti,ab	11092
24	EMBASE	("mode of childbirth" OR "mode of birth").ti,ab	560
25	EMBASE	(23 OR 24)	11598
26	EMBASE	(15 AND 25)	95
27	EMBASE	26 not 22	59
28	EMBASE	*"CESAREAN SECTION"/ OR *"REPEAT CESAREAN SECTION"/	28540
29	EMBASE	(15 AND 28)	24
30	CINAHL	(crohn*).ti,ab	6324
31	CINAHL	exp "CROHN DISEASE"/	5958
32	CINAHL	(30 OR 31)	8093
33	CINAHL	(cesarean* OR caesarean* OR "c section*").ti,ab	19181
34	CINAHL	exp "CESAREAN SECTION"/	16785
35	CINAHL	(33 OR 34)	24648
36	CINAHL	(vagina* ADJ2 (birth* OR deliver*)).ti,ab	6794
37	CINAHL	("mode of delivery").ti,ab	2249
38	CINAHL	("mode of childbirth" OR "mode of birth").ti,ab	265

39	CINAHL	(37 OR 38)	2499
40	CINAHL	(32 AND 35 AND 36)	2
41	CINAHL	(32 AND 39)	5
42	Medline	exp "INFLAMMATORY BOWEL DISEASES"/	78332
43	Medline	("inflammatory bowel disease").ti,ab	39391
44	Medline	(42 OR 43)	92996
45	Medline	(6 AND 7 AND 44)	35
46	Medline	("mode of delivery").ti,ab	6669
47	Medline	("mode of childbirth" OR "mode of birth").ti,ab	368
48	Medline	(46 OR 47)	7003
49	Medline	(44 AND 48)	50
51	EMBASE	exp "INFLAMMATORY BOWEL DISEASE"/	144225
52	EMBASE	(18 AND 21 AND 51)	142
53	EMBASE	52 not 22	56