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Publications by Redcliffe Hospital Staff (includes abstract)


According to news reporting out of Redcliffe, Australia, by NewsRx editors, the research stated, "An association between non-opioid analgesic agents and chronic kidney disease has long been suspected. According to the news editors, the research concluded: "In the absence of high-level evidence, while controversy persists, it may be prudent for...


BACKGROUND: Emergency appendicectomy is the most common emergency surgical procedure performed in Australia. Despite this frequency, there is a relative paucity of contemporary, broad-based, local data that examine how emergency appendicectomies are currently performed and what are the outcomes from these operations. METHODS: A multicentre, prospective, observational study was performed. Patients were recruited by local investigators for a period of 2 months with 30-day follow-up. Patients were eligible for study inclusion if they underwent an emergency appendicectomy for suspected acute appendicitis. The primary outcome of the study was the negative appendicectomy rate (NAR), with secondary outcomes including 30-day complication rates, method of operation and conversion rates.

RESULTS: A total of 1189 patients were recruited across 27 centres. The NAR across all centres was 19.0%. 98.2% of appendicectomies were performed with a laparoscopic-first approach. The rate of conversion from laparoscopy to open operation was 2.4%. 9.4% of patients were recorded as having one or more of the following complications: readmission (6.6%), surgical site infection (1.9%), intra-abdominal abscess (2.7%) or further intervention (1.5%). Patients who had an open operation had higher rates of readmission and surgical site infection. CONCLUSION: The NAR found in this study is within the traditional measures of acceptance; however, this rate is high when measured against modern international benchmarks.


Osteal macrophages (osteomacs) contribute to bone homeostasis and regeneration. To further distinguish their functions from osteoclasts, which share many markers and growth factor requirements, we developed a rapid, enzyme-free osteomac enrichment protocol that permitted characterization of minimally manipulated osteomacs by flow cytometry. Osteomacs differ from osteoclasts in expression of Siglec1 (CD169). This distinction was confirmed using the CD169-diphtheria toxin (DT) receptor (DTR) knock-in model. DT treatment of naive CD169-DTR mice resulted in selective and striking loss of osteomacs, whilst osteoclasts and trabecular bone area were unaffected. Consistent with a previously-
reported trophic interaction, osteomac loss was accompanied by a concomitant and proportionately striking reduction in osteoblasts. The impact of CD169(+) macrophage depletion was assessed in two models of bone injury that heal via either intramembranous (tibial injury) or endochondral (internally-plated femoral fracture model) ossification. In both models, CD169(+) macrophage, including osteomac depletion compromised bone repair. Importantly, DT treatment in CD169-DTR mice did not affect osteoclast frequency in either model. In the femoral fracture model, the magnitude of callus formation correlated with the number of F4/80(+) macrophages that persisted within the callus. Overall these observations provide compelling support that CD169(+) osteomacs, independent of osteoclasts, provide vital pro-anabolic support to osteoblasts during both bone homeostasis and repair.


Background: Glucocorticoids (GCs) are used in ~ 60% of patients with rheumatoid arthritis (RA). Although disease-modifying, they also have significant adverse effects. Understanding factors associated with GC use may help minimise exposure. The aims of the present study were to describe oral GC use in RA; determine any change in use over time; and determine factors associated with oral GC use, commencement or cessation.; Methods: Adult patients with RA were identified in the Australian Rheumatology Association Database (ARAD), a national Australian registry that collects long-term outcome data from patients with inflammatory arthritis. Patients were categorised by their ARAD date of entry (DOE), with population-averaged logistic regression and transition state analysis used to determine any change in GC use over time. Fixed-effects panel regression was used to examine whether GC current use was associated with pain/arthritis activity/Health Assessment Questionnaire (HAQ) scores or medication use. Transition state analysis was used to assess whether these factors influenced the commencement or cessation of GCs.; Results: A total of 3699 patients with RA completed a baseline ARAD questionnaire (73% female, mean age 57 years). The probability of GC use decreased over time according to ARAD DOE: September 2001 to March 2005, 55% (95% CI 52-58%); March 2005 to September 2008, 47% (45-49%); September 2008 to March 2012, 42% (39-45%); and March 2012 to October 2015, 39% (34-43%) (p < 0.001). Conventional synthetic disease-modifying anti-rheumatic drugs (OR 10.13; 95% CI 8.22-12.47), non-steroidal anti-inflammatory drugs (1.18; 1.02–1.37) and opioids (2.14; 1.84-2.48) were associated with GC current use, as were lower pain scores (0.94; 0.90-0.98), higher arthritis activity scores (1.09; 1.05-1.14) and poorer HAQ scores (1.52; 1.30-1.79). Use of biologic disease-modifying anti-rheumatic drugs (bDMARDS) was not associated with GC current use (0.98; 0.83-1.15) or GC cessation (HR 0.87; 95% CI 0.75-1.01), but it was associated with GC commencement (0.54; 0.47-0.62).; Conclusions: The probability of oral GC use decreased over time, with reduced commencement and increased cessation of GCs. The modest effect of bDMARDS on GC cessation was not statistically significant.;


OBJECTIVE: Provision of a discharge care plan and prevention therapies is often suboptimal. Our objective was to design and pilot test an interdisciplinary, organisational intervention to improve discharge care using stroke as the case study using a mixed-methods, controlled before-after observational study design. SETTING: Acute care public hospitals in Queensland, Australia (n=15). The 15 hospitals were ranked against a benchmark based on a composite outcome of three discharge care processes. Clinicians from a ‘top-ranked’ hospital participated in a focus group to elicit their success factors. Two pilot hospitals then participated in the organisational intervention that was designed with experts and consumers. PARTICIPANTS: Hospital clinicians involved in discharge care for stroke and patients admitted with acute stroke or transient ischaemic attack. INTERVENTION: A four-stage, multifaceted organisational intervention that included data reviews, education and facilitated action planning. PRIMARY AND SECONDARY OUTCOME MEASURES: Three discharge processes collected in Queensland hospitals within the Australian Stroke Clinical Registry were used to select study hospitals:


counsel, contact with doctors or the increased motivation to space pregnancies due to the risks of short intervals between caesarean section. There is scope for further improvement of contraception uptake by improved antenatal counselling, which could be followed-up on admission for delivery.


Pressure injuries (PIs) are highest amongst the critically ill. The impact of PIs is well reported and includes increased length of stay in acute facilities, increased cost of care, decreased quality of life, and pain and disability for the patient. Over the last decade, a considerable amount of research has been undertaken in the area of PI prevention. We now know that the use of prophylactic silicone dressings can assist in reducing the incidence of PIs in critically ill patients. However, there is currently a gap in the literature in comparing the effectiveness of different silicone products available in Australia. This cluster-controlled clinical trial aims to compare the onset of PIs and cost-effectiveness between two silicone products currently available.


Introduction Some studies have found an association between bleeding in the first trimester and a variety of adverse obstetric outcomes. The objective was to evaluate whether there was an increased incidence of adverse pregnancy outcomes in the setting of vaginal bleeding in the first trimester of pregnancy. Methods A retrospective study was conducted from 2007 to 2012 of women presenting to Redcliffe Hospital Emergency Department and Early Pregnancy Assessment Unit with first-trimester vaginal bleeding and a viable pregnancy on ultrasound at the time of presentation. Bleeding was classified as light, moderate, heavy or unclassified. The presence or absence of a perigestational haematoma on ultrasound was also recorded. Adverse maternal outcomes of interest were miscarriage, prelabour preterm rupture of membranes (PPROM) and premature delivery, hypertension and pre-eclampsia, antepartum haemorrhage, postpartum haemorrhage, and emergency caesarean section. Adverse outcomes for the fetus included intrauterine growth restriction and admission to Special Care Nursery. Data were analysed to determine if there was a statistically significant trend between the degree of bleeding at presentation and occurrence of an adverse event and if there was an association between the presence of a perigestational haematoma and the occurrence of an adverse event. Results There were 243 women presenting to Redcliffe Hospital with first-trimester vaginal bleeding and a viable intrauterine pregnancy during the study period. Thirty-six percent of women delivered by caesarean section. PPROM occurred in 7.5% of women. Hypertension occurred in 7.1% of women. Pre-eclampsia occurred in 2.9% of women. Antepartum haemorrhage occurred in 3.8% of women. Preterm delivery occurred with 9.1% of women. Postpartum haemorrhage occurred with 7.1% of women. Intrauterine growth restriction affected 5.9% of fetuses. Twenty-one percent of babies were admitted to the Special Care Nursery. In total, 39.2% of women/babies experienced an adverse outcome. Of women presenting with light bleeding, 77.7% experienced an adverse event whereas this was 13.8% in moderate bleeding and 8.5% in heavy bleeding. Of the 230 women who had a perigestational haematoma, 33.3% experienced an adverse event. There is some suggestion that women with a perigestational haematoma are more likely to have an adverse event but this does not reach statistical significance (P = 0.17). Conclusion Based on the limited number of cases included in this study, there was no statistical evidence that vaginal bleeding in the first trimester or the presence of perigestational haematoma is associated with an adverse event occurring in late pregnancy. A follow-on study will be performed to further evaluate these outcomes with a larger cohort.


Background Ectopic pregnancy post-hysterectomy is an exceedingly rare event that has been reported fewer than 100 times in the literature. It is a dangerous diagnosis that is often missed and post-hysterectomy patients are rarely investigated for an ectopic pregnancy. Case A 30-year-old woman presented to the emergency department following a 10-day history of progressive, severe lower abdominal pain and mild vaginal bleeding associated with subjective fevers, nausea and bloating. She had undergone an emergency total hysterectomy at caesarean section 3 years before, performed for intractable haemorrhage during an emergency caesarean section. On presentation she was alert and oriented but uncomfortable. Examination revealed tachycardia with a low-grade fever of 37.8°C. Other vitals were normal. Abdomen was soft with significant suprapubic tenderness. Speculum examination revealed a small amount of old blood in the vault. Routine bloods fortuitously included a β-human chorionic gonadotrophin (βhCG), which returned positive at 2800 IU/l. Haemoglobin was 118 g/l. Pelvic ultrasound revealed an 87 × 48 × 69-mm, illdefined heterogeneous area superior to the vaginal vault.
Magnetic resonance imaging of the abdomen showed a non-specific, heterogeneous mass abutting the uterine stump.Appearances, although relatively non-specific, were suggestive of haemorrhage. The lack of vascularity and findings of no local invasion, pelvic lymph nodes or ascites were against advanced malignancy or choriocarcinoma; however germ cell tumour could not be excluded. Tumour markers were normal except for a CA125 of 39 kU/L. Computed tomography of chest did not show any signs of metastatic disease. Laparotomy 13 days later found an organised haematoma and bilaterally dilated fallopian tubes. Frozen section of the resected mass found no signs of malignancy. Final histology revealed a left fallopian tube showing recent rupture lined by organising haematoma with no products of conception noted. The diagnosis of ruptured tubal ectopic pregnancy was made from the elevated \( \beta \)-hCG, pelvic haematoma and acute clinical picture. The patient’s recovery was uneventful and she was discharged home on day 6 with a \( \beta \)-hCG <5 U/L. Conclusion: Ectopic pregnancy post-hysterectomy is a rare, potentially fatal condition. A high degree of suspicion and a low threshold for performing a pregnancy test on all women presenting with potential symptoms of ectopic pregnancy, regardless of hysterectomy status, may lead to earlier diagnosis and fewer complications of this condition.

Janda, M., et al. (2017). “Factors influencing women’s decision making in hysterectomy.” Patient Educ Couns. OBJECTIVE: To explore factors influencing how well-informed women felt about hysterectomy, influences on their decision making, and on them receiving a less-invasive alternative to open surgery. METHODS: Online questionnaire, conducted in 2015-2016, of women who had received a hysterectomy in Australia, in the preceding two years. RESULTS: Questionnaires were completed by 2319/6000 women (39% response). Most women (n=2225; 96%) felt well-informed about hysterectomy. Women were more aware of the open abdominal approach (n=1798; 77%), than of less-invasive vaginal (n=1552; 67%), laparoscopic (n=1540; 66%), laparoscopic-assisted (n=1303; 56%), and robotic approaches (n=289; 12%). Most women (n=1435; 62%) reported their gynaecologist was the most influential information source. Women who received information about hysterectomy from a GP (OR=1.47; 95% CI 1.15-1.90), or from a gynaecologist (OR=1.3; 95% CI 1.06-1.58), were more likely to feel better informed (p<0.01). CONCLUSION: This study is important because it helps clinicians, researchers and health policy makers to understand why many women still receive an open abdominal approach despite many learned societies recommending to avoid it if possible. PRACTICE IMPLICATIONS: Additional information, or education about avoiding open abdominal approach where possible may lead to a greater number of women receiving less-invasive types of hysterectomy in the future.


Khalafallah, A. A., et al. (2017). "Long-term safety of monthly zoledronic acid therapy beyond 1 year in patients with advanced cancer involving bone (LoTESS): A multicentre prospective phase 4 study." Eur J Cancer Care (Engl). Malignant bone disease can cause significant morbidity. Monthly zoledronic acid (ZOL) reduces skeletal complications; however, limited data are available regarding long-term safety. We aimed to assess efficacy and safety of ZOL beyond 1 year of treatment. We prospectively evaluated 73 patients; breast cancer (n = 29), castrate-resistant prostate cancer (n = 13), multiple myeloma (n = 31) from 2006 to 2008 in 19 cancer centres. All patients were diagnosed with bone disease and had completed 1-2 years of monthly ZOL (4 mg) and received a further 1-2 years of therapy following contemporary guidelines for managing risks of osteonecrosis of the jaw (ONJ) and renal toxicity. Overall rates of skeletal-related events (SREs), renal impairment and ONJ were assessed. Over the additional 1 year of treatment, only 5.5% (n = 4) of patients developed a new SRE. The overall Kaplan-Meier estimate for SRE incidence after 48 weeks on study was 6.75% (95% CI 2.5-17.3). Although 51% of patients reported serious adverse events, only two cases were suspected as ZOL related. No patients had confirmed ONJ. The observed incidence of new renal impairment was 11% (none due to ZOL). Our study confirms the benefit over risk of continuing monthly ZOL for at least 2 years in patients with advanced cancer involving bone.

Kothari, A., et al. (2017). "Forgotten fathers: Stressors and coping mechanisms of fathers facing traumatic pregnancy and childbirth." BJOG: An International Journal of Obstetrics and Gynaecology 124((Kothari A.; Dulhunty J.; Bruxner G.) Redcliffe Hospital, Australia); 42. Objective To explore stressors and coping mechanisms for fathers or expectant fathers facing a traumatic event during a partner’s pregnancy, including stillbirth, serious fetal abnormalities, lifethreatening perinatal maternal and neonatal complications and pregnancy termination. Design Prospective qualitative study. Setting An outer metropolitan hospital in Brisbane, Australia. Sample Twenty-six consenting male partners who had experienced a traumatic pregnancy between March 2014 and March 2015. Methods A senior psychiatrist interviewed the male partners at 3 months after an adverse finding or traumatic event during pregnancy using phone and face-to-face semi-structured interviews. Thematic analysis of the interviews was complemented by relational content analysis using
LEXIMANCER software. Main outcome measures Stressors, supports used and available, coping strategies used and evidence of psychological symptoms in male partners. The presentation of narratives was subdivided by the general nature of the stressor, i.e. sudden stressor and negative outcome versus sudden stressor and positive outcome or anticipatory concern and negative outcome versus anticipatory concern and positive outcome. Results: The experience of the male partners facing a traumatic pregnancy were diverse; however, common themes emerged. Prominent stressors included anxiety about subsequent pregnancy, problems with provision of medical information, problems with well-intended inquiries from others about recent work absence or pregnancy progress, and their partners need to communicate. The participants interviewed found support from male friends, parents with a similar pregnancy and family most helpful. Participants generally felt professional support was available and did not feel disadvantaged compared to their partner in this respect. However, very few of the participants received any form of professional counselling. The most common coping strategies included displacement of their own needs to their partner, i.e. ‘being strong’ (nine), wanting to ‘forget’ (four), engagement with existing children (three), religion and spirituality (three), fate (three), faith in medical staff (two) and exercise (two). Two fathers reported significantly escalated alcohol use and two reported unhelpfully consulting online information. Anger and irritability were more common psychological symptoms (four). Three participants reported significant depressive symptoms. Conclusion: Commonalities were observed in terms of stressors, coping style and support utilisation by male partners facing an adverse event during pregnancy. However, even with the availability of professional supports there appears to be a reluctance of men to access these. The narratives presented provide deeper understanding for healthcare providers of the experiences of men facing unexpected challenges and of their perceptions of life, their relationships and their certainty in the future.


INTRODUCTION: Radiological insertion of Tenckhoff catheters can be an alternative option for peritoneal dialysis access creation, as compared to surgical catheter insertion. This study will review the outcomes and complications of radiological Tenckhoff catheter insertion in a metropolitan renal service and compare costs between surgical and radiological insertion. METHODS: Data were collected prospectively for all patients who had a Tenckhoff catheter insertion for peritoneal dialysis (PD) under radiological guidance at our hospital from May 2014 to November 2016. The type of catheter used and complications, including peri-catheter leak, exit site infection and peritonitis were reviewed. Follow-up data were also collected at points 3, 6 and 12 months from catheter insertion. Costing data were obtained from Queensland Health Electronic Reporting System (QHERS) data, average staff salaries and consumable contract price lists. RESULTS: In the 30-month evaluation period, 70 catheters were inserted. Two patients had an unsuccessful procedure due to the presence of abdominal adhesions. Seven patients had an episode of peri-catheter leak, and four patients had an exit site infection following catheter insertion. Peritonitis was observed in nine patients during the study period. The majority of patients (90%) remained on peritoneal dialysis at 3-month follow-up. The average costs of surgical and radiological insertion were noted to be AUD$7788.34 and AUD$1597.35, respectively. CONCLUSION: Radiological Tenckhoff catheter insertion for peritoneal dialysis appears to be an attractive and cost-effective option given less waiti-


There is increasing evidence associating idiopathic granulomatous mastitis (IGM) with hyperprolactinemia. All documented cases have involved the patient having at least one operative procedure before the association has been made. We present a 55 year old female with IGM associated with risperidone induced hyperprolactinemia. She was successfully treated with a dopamine agonist, bromocriptine. We demonstrated that complete resolution can be achieved without surgical intervention, by targeting serum prolactin levels. We hope this will increase awareness of this rare clinically entity and avoid potentially unnecessary surgery.


Introduction Ewing's sarcoma (ES), also known as primary neuroectodermal tumours (PNeT), is a malignant tumour that usually arises from bone but may also arise from most soft-tissue structures including the uterus and cervix. Like other primary uterine sarcomas, the diagnosis may be delayed due to the nonspecific clinical and imaging characteristics of these tumours. All too often sarcomas masquerade as the much more common, benign, leiomyoma. Delayed surgical management of these lesions, in which time conservative or medical management for leiomyomas may be attempted, allows further progression. To date, histological analysis is the only way to accurately differentiate malignant sarcomas from leiomyoma. Without definitive diagnosis, the delay in treatment results in poor outcomes for these patients. Methods A systematic review, based on PRISMA guidelines, was conducted identifying published cases were from MEDLINE, EMBASE Scopus and Pubmed. Only those cases that were confirmed on histological diagnosis and of primary uterine or cervical origin at surgery were included. Discussion The systematic review identified 50 cases of primary uterine ES in the literature. The mean age of patients was 37-yearsold. Compared with leiomyomas, pain was a much more common reason to seek medical attention, accounting for 84% of patients main, or only, complaint. As expected, abnormal bleeding was also commonly described. Most published papers did not report imaging in enough detail to identify any significant trends; however, several cases describe complex cystic features of the tumours that were found on ultrasound, computed tomography and magnetic resonance imaging (MRI). Metastatic disease was suspected in 23% of cases. Surgical resection, followed by chemotherapy and/or radiotherapy was treatment of choice in all cases, with total abdominal hysterectomy by far the most common procedure. Although 79% of patients were still alive at the time of publication of their cases the 5-year survival has been reported to be as low as 38%. Conclusion ES of the uterus and cervix are difficult to differentiate from benign leiomyomas. The main presenting complaint of pelvic pain, however, is quite dissimilar to the heavy vaginal bleeding usually associated with leiomyomas. This may heighten the clinicians’ suspicion of malignancy in cases where uterine masses are found after investigation for pelvic pain. Although the data are insufficient, a cystic nature of uterine masses appear to be common in ES. MRI may be helpful in assisting with the diagnosis.


Background: The EVOLVE (evaluating evidence, enhancing efficiencies) initiative aims to drive safer, higher-quality patient care through identifying and reducing low-value practices.; Aims: To determine the Australian Rheumatology Association's (ARA's) 'top 5' list of low-value practices.; Methods: A working group comprising 19 rheumatologists and three trainees compiled a preliminary list. Items were retained if there was strong evidence of low-value and there was high or increasing clinical use and/or increasing cost. All ARA members (356 rheumatologists and 72 trainees) were invited to indicate their 'top 5' list from a list of 12 items via MonkeySurvey in December 2015 (reminder February 2016) ; Results: 179 rheumatologists (50.3%) and 19 trainees (26.4%) responded. The top 5 list (percent of rheumatologists including item in their top 5 list) was: Do not perform arthroscopy with lavage and/or debridement for symptomatic osteoarthritis of the knee nor partial meniscectomy for a degenerative meniscal tear (73.2%); Do not order ANA testing without symptoms and/or signs suggestive of a systemic rheumatic disease (56.4%); Do not undertake imaging for low back pain for patients without indications of an underlying serious condition (50.8%); Do not use ultrasound guidance to perform injections into the subacromial space as it provides no additional benefit in comparison to landmark-guided injection (50.3%); and Do not order anti dsDNA antibodies in ANA negative patients unless the clinical suspicion of SLE remains high (45.3%); Conclusions: This list is intended to increase awareness among rheumatologists, other clinicians and patients about commonly used low-value practices that should be questioned.; This article is protected by copyright. All rights reserved.


PurposeTo determine if there are systematic differences in cup-to-disc ratio (CDR) grading using fundus biomicroscopy compared to stereoscopic disc photograph reading.MethodsThe vertical cup-to-disc ratio (VCDR) and horizontal cup-to-disc ratio (HCDR) of 2200 eyes (testing set) were graded by glaucoma subspecialists through fundus biomicroscopy and by a reading center using stereoscopic disc photos. For validation, the glaucoma experts also estimated VCDR and HCDR using stereoscopic disc photos in a subset of 505 eyes that they had assessed biomicroscopically. Agreement between grading methods was assessed with Bland-Altman plots.ResultsIn both sets, photo reading tended to yield small CDRs marginally larger, but read large CDRs marginally smaller than fundus biomicroscopy. The mean differences in VCDR and HCDR were 0.006±0.18 and 0.05±0.18 (testing set), and -0.053±0.23 and -0.028±0.21 (validation set), respectively. The limits of agreement were ~0.4, which is twice as large as the cutoff of clinically significant CDR difference between methods. CDR estimates differed by 0.2 or more in 33.8-48.7% between methods.ConclusionsThe differences in CDR estimates between fundus
biomicroscopy and stereoscopic optic disc photo reading showed a wide variation, and reached clinically significant threshold in a large proportion of patients, suggesting a poor agreement. Thus, glaucoma should be monitored by comparing baseline and subsequent CDR estimates using the same method rather than comparing photographs to fundus biomicroscopy. Eye advance online publication, 7 April 2017; doi:10.1038/eye.2017.50;


This article reports upon an initiative to improve the timeliness of occupational therapy home visits for discharge planning by implementing technology solutions while maintaining patient safety. A community hospital in Queensland, Australia, hosted a process evaluation that examined which aspects of home visiting could be replaced or augmented by alternative technologies. Strategies were trialled, implemented and assessed using the number of home visits completed and the time from referral to completion as outcomes. A technology-enhanced solution called “Home Quick” was developed using technology to facilitate pre-discharge home visits. The implementation of Home Quick resulted in an increase in the number of home visits conducted prior to discharge (50% increase from 145 to 223) and significantly increased the number of patients seen earlier following referral (X²=69.3; p<0.001). The substitution of direct home visits with technology-enabled


Introduction Uterine arteriovenous malformation (AVM) is an abnormal connection between branches of uterine artery and venous plexus within the myometrium, and can be classified as congenital or acquired. Acquired uterine AVM is more commonly seen in women with a history of previous uterine surgery such as curettage or caesarean section. Symptoms are typically heavy vaginal bleeding which can be profuse, leading to haemodynamic instability. A literature review was conducted to identify all published reports of uterine arteriovenous malformation as a cause of pregnancy-related haemorrhage secondary to a miscarriage, ectopic pregnancy or an intrauterine pregnancy at any gestation. Additionally we also report on a case from our institution. Methods PRISMA guidelines were followed for this systematic review. A search of Medline, Embase, Scopus and Pubmed was conducted to include all definitive cases of bleeding caused by uterine AVM in relation to an antecedent pregnancy. The data were analysed to explore presenting symptoms, imaging modalities to aid diagnosis and treatment including uterine artery embolisation or hysterectomy. Complications and follow-up were also analysed. Discussion The search yielded 55 cases with an additional case at our institution resulting in a total of 56 cases. The median age at presentation was 32-years-old. Primary presenting symptom was profuse vaginal bleeding noted in 46/56 cases (82%). A total of 42/56 (75%) had previous uterine surgery namely curettage or caesarean section. One case had no previous uterine surgery but had a known congenital AVM. Our case is the only patient with an acquired AVM in the absence of previous uterine surgery, manual removal of placenta or miscarriage. There was significant morbidity requiring a transfusion in 24% of women. For management, 32/56 (57%) of cases had uterine artery embolisation, with 10/56 (18%) required hysterectomy. Nine of 56 (16%) cases were followed-up and had pregnancy with delivery of a term infant. Conclusion Uterine AVM is a rare cause of pregnancy-related vaginal bleeding. Early diagnosis and treatment are vital to avoid life-threatening haemorrhage and need for hysterectomy. Profuse haemorrhage can occur from AVM during curettage if incorrectly diagnosed as retained products. AVM may be managed expectantly in stable patients and follow-up shows that some lesions may regress. In women with ongoing or recurrent episodes of bleeding more definitive management should be offered due to the risk of significant haemorrhage.


Several studies suggest that alternatives to carbapenems, and particularly beta-lactam/beta-lactamase inhibitor combinations, can be used for therapy of extended-spectrum beta-lactamase-producing Enterobacteriaceae (ESBL-PE)-related infections in non-ICU patients. Little is known concerning ICU patients in whom achieving the desired plasmatic pharmacokinetic/pharmacodynamic (PK/PD) target may be difficult. Also, in vitro susceptibility to beta-lactamase inhibitors might not translate into clinical efficacy. We reviewed the recent clinical studies examining the use of BL/BLI as alternatives to carbapenems for therapy of bloodstream infection, PK/PD data and discuss potential ecological benefit from avoiding the use of carbapenems. With the lack of prospective randomized studies, treating ICU patients with ESBL-PE-related infections using piperacillin-tazobactam should be done with caution. Current data suggest that BL/BLI empirical use should be avoided for therapy of ESBL-PE-related infection. Also, definitive therapy should be reserved to patients in clinical stable condition, after
microbial documentation and results of susceptibility tests. Optimization of administration and higher dosage should be used in order to reach pharmacological targets.


Nurse Practitioners (NPs) receive core clinical training at master's level, with their employer providing the opportunity to upskill in clinical and procedural competencies. It is increasingly recognised that this generic education requires supplementary training for operating effectively within a specific clinical environment. In this paper we describe a pilot program designed to train Australian NP Candidates to work effectively within the Emergency Department Fast Track model of care. The training program consisted of a 12-month period: four hours in-house training per week over two semesters, running concurrently with the NP candidate's University semesters, and 3 months' clinical practice to consolidate. The training team defined milestones for Semesters one and two, and developed a case review form to assess application of the candidate's knowledge in new clinical situations, as well as check for gaps in understanding. A clinical skills guide was developed for the candidate to work toward, and a comprehensive assessment was carried out at two time points in the training program. Feedback was obtained from the mentors and the candidate at the end point of the training program, and has been used to refine the program for 2017. This in-house training program provided specialised, evidence-based training for the emergency department environment, resulting in development of the nurse practitioner candidate as a high functioning team member.


Introduction: X-ray Operator (XO) supervision in Queensland is performed by radiographers in a site removed from the XO site. This has historically been performed by telephone when the XO requires immediate help, as well as post-examination through radiographer review and the provision of written feedback on images produced. This project aimed to improve image quality through the provision of real-time support of XOs by the introduction of video conference (VC) supervision.; Methods: A 6-month pilot project compared image quality with and without VC supervision. VC equipment was installed in the X-ray room at two rural sites, as well as at the radiographer site, to enable visual and oral supervision. The VC unit enabled visualisation of the X-ray examination technique as it was being undertaken, as well as the images produced prior to transmission to the Picture Archiving and Communication System (PACS); Results: Statistically significant improvement in image quality criteria measures were seen for patient positioning (P = 0.008), image quality (P < 0.001) and diagnostic value (P < 0.001) of images taken during this project. No statistically significant differences were seen during case level assessment in the inclusion of only appropriate imaging (P = 0.06), and the inclusion of unacceptable imaging (P = 0.06), however improvements were seen in both of these criteria. The survey revealed 24.6% of examinations performed would normally have involved the XO contacting the radiographer for assistance, although, assistance was actually provided in 88.3% of examinations.; Conclusion: This project has demonstrated that significant improvement in image quality is achievable with VC supervision. A larger study with a control arm that did not receive direct supervision should be used to validate the findings of this study.; © 2017 The Authors. Journal of Medical Radiation Sciences published by John Wiley & Sons Australia, Ltd on behalf of Australian Society of Medical Imaging and Radiation Therapy and New Zealand Institute of Medical Radiation Technology.

Redcliffe Hospital Research Steering Committee (2017). Redcliffe Hospital research report Redcliffe Hospital Research Steering Committee. J. Dulhuntly, Redcliffe, Queensland Redcliffe Hospital Research Steering Committee.


Background: Online communities of practice (oCoPs) may emerge from interactions on social media. These communities offer an open digital space and flat role hierarchy for information sharing and provide a strong group identity, rapid flow of information, content curation, and knowledge translation. To date, there is only a small body of evidence in medicine or health care to verify the existence of an oCoP.; Objective: We aimed to examine the emergence of an oCoP through the study of social media interactions of the free open access medical education (FOAM) movement.; Methods: We examined social media activity in Twitter by analyzing the network centrality metrics of tweets with the #FOAMed hashtag and compared them with previously validated criteria of a community of practice (CoP); Results: The centrality analytics of the FOAM community showed concordance with aspects of a general CoP (in terms of community, domain, and practice), as well as some specific traits of a health care community,

BZ: study protocol for a randomized controlled trial.


Background: Psychotic disorders affect up to 3% of the population and are often chronic and disabling. Innovation in the pharmacological treatment of psychosis has remained stagnant in recent decades. In order to improve outcomes for those with psychotic disorders, we present a protocol for the trial of a common food preservative, sodium benzoate, as an adjunctive treatment in early psychosis.; Methods: Persons experiencing early psychosis (n = 160) will be recruited through hospitals and community mental health services in Queensland, Australia. Patients will be randomized to receive either 12-week treatment with 1000 mg (500 mg twice daily (BD)) sodium benzoate or placebo. Patients will undergo fortnightly outcome assessments, in addition to weekly ongoing capacity to consent, drug compliance and safety assessments. The primary outcome measure is the Positive and Negative Syndrome Scale (PANSS) total score. Secondary outcomes are Global Assessment of Function (GAF), Assessment of Quality of Life Scale (AQOL), the Activity and Participation Questionnaire (APQ), International Physical Activity Questionnaires (IPAQ), Simple Physical Activity Questionnaire (SIMPAQ), Physical Activity Questionnaire, Clinical Global Impression (CGI), Hamilton Depression rating Scale-17 items (HDRS), Opiate Treatment Index (OTI) and the Patients’ Global Impression of Improvement (PGI-I). As a tertiary objective, changes from baseline to endpoint in to serum markers related to D-alanine, L-alanine, D-serine, L-serine, glycine and glutamate will be investigated.; Discussion: Consumers and clinicians are keen to help develop better treatments for those with psychosis. This study, part of the wider Cadence clinical trials platform will examine if a safe and accessible food preservative can help optimize outcomes in those with psychosis.; Trial Registration: Australian New Zealand Clinical Trials registry (ANZCTR), ACTRN12615001875499 . Registered on 26 February 2015.;


Introduction Sexual intercourse is essential for human procreation. The consensual physiological act may occasionally prove life threatening for the female partner. The various injuries caused by sexual intercourse include vulvovaginal injuries, vault injuries, vaginal evisceration, haemoperitoneum, pneumoperitoneum, haemorrhagic shock, urological and anogenital injuries, air embolism, subarachnoid haemorrhage, syncope and death. Identifying their pattern of presentation and predisposing factors may aid in their management and prevention. The objective was to identify serious injuries after consensual sexual intercourse and analyse the overall outcomes in these women. Methods This study includes a retrospective review of all women with consensual postcoital injuries presenting to Redcliffe Hospital, Australia, over a period of 11 years (2003-13). In addition, a systematic review of literature has also been conducted based on PRISMA guidelines to identify suitable cases using PubMed, Ovid and Medline. The search strategy yielded 576 unique records and after appropriate screening, a total of 474 women (including 20 from our case series) were considered for the systematic review. Results Although significant injuries are an uncommon event after consensual intercourse, the true incidence may be difficult to ascertain. Including our series, a total of 474 cases of consensual coital injuries were identified. In this series, a total of 44.5% patients required admission. The most common injury noted was vulvovaginal injury (78%). Of these, the vast majority (32.1%) had an injury of the posterior fornix and posterior aspect of vault. Surgical management was required in (66.9%) and a significant proportion of women received a blood transfusion (22.5%). Out of the 474 patients, seven (1.4%) sustained a fatal injury resulting in death due to air embolism (five), subarachnoid haemorrhage (one) and severe fornix injury (one). In our case series of 20 women, the most common age group sustaining the injuries were 21-30 years old (60%). Approximately, 65% patients presenting with consensual postcoital injuries required admission and surgical intervention. The injuries were extensive in 20% resulting in massive vaginal bleeding (two), haemoperitoneum (one) and bowel evisceration (one). Conclusion Although consensual sexual intercourse is largely safe, occasionally it may be associated with significant morbidity and mortality. The outcome is generally favourable; however, there is a significant need for surgical intervention and blood transfusion. Therefore, these patients should be attended to promptly on presentation to the hospital. It is also equally important to educate women about potential seriousness of injuries resulting from consensual intercourse.


Background: Psychotic disorders affect up to 3% of the population and are often chronic and disabling. Innovation in the pharmacological treatment of psychosis has remained stagnant in recent decades. In order to improve outcomes for those with psychotic disorders, we present a protocol for the trial of a common food preservative, sodium benzoate, as an adjunctive treatment in early psychosis.; Methods: Persons experiencing early psychosis (n = 160) will be recruited through hospitals and community mental health services in Queensland, Australia. Patients will be randomized to receive either 12-week treatment with 1000 mg (500 mg twice daily (BD)) sodium benzoate or placebo. Patients will undergo fortnightly outcome assessments, in addition to weekly ongoing capacity to consent, drug compliance and safety assessments. The primary outcome measure is the Positive and Negative Syndrome Scale (PANSS) total score. Secondary outcomes are Global Assessment of Function (GAF), Assessment of Quality of Life Scale (AQOL), the Activity and Participation Questionnaire (APQ), International Physical Activity Questionnaires (IPAQ), Simple Physical Activity Questionnaire (SIMPAQ), Physical Activity Questionnaire, Clinical Global Impression (CGI), Hamilton Depression rating Scale-17 items (HDRS), Opiate Treatment Index (OTI) and the Patients’ Global Impression of Improvement (PGI-I). As a tertiary objective, changes from baseline to endpoint in to serum markers related to D-alanine, L-alanine, D-serine, L-serine, glycine and glutamate will be investigated.; Discussion: Consumers and clinicians are keen to help develop better treatments for those with psychosis. This study, part of the wider Cadence clinical trials platform will examine if a safe and accessible food preservative can help optimize outcomes in those with psychosis.; Trial Registration: Australian New Zealand Clinical Trials registry (ANZCTR), ACTRN12615001875499 . Registered on 26 February 2015.;
Introduction Ectopic pregnancy post-hysterectomy is an exceedingly rare event that is often missed and may be life threatening. Post-hysterectomy patients who present with signs and symptoms of an ectopic pregnancy are rarely investigated for it, leading to a delay in diagnosis and appropriate treatment. Cases can be classified as early or late ectopic pregnancy posthysterectomy. In early cases the potential for pregnancy exists at the time of hysterectomy (either viable sperm or fertilised ovum in the fallopian tubes). In late cases, a fistulous conduit may develop between the vagina and peritoneal cavity secondary to granulation tissue or a prolapsed fallopian tube, allowing the passage of sperm resulting in a pregnancy. The purpose of this study is to review all published cases of ectopic pregnancy posthysterectomy, and to characterise the presentation, investigation and management of this condition. Methods PRISMA guidelines were followed for this systematic review. All cases suitable for inclusion in the review were identified through Pubmed, EMBASE, Scopus, and Web of Science. The strict inclusion criteria ensured that only those cases of ectopic pregnancy were included where the diagnosis was confirmed by definitive tests such as serum or urine β-human chorionic gonadotrophin, ultrasound with the presence of fetal heartbeat, histology, or the birth of a fetus. Results The search yielded 56 cases, with an additional case at our institution resulting in a total of 57 patients. Almost all patients presented with abdominal pain, (94%). β-Human chorionic gonadotrophin was measured in 49% of cases. Management was overwhelmingly surgical, with only one case successfully treated with methotrexate; 30% of cases required a transfusion. Most cases occurred after vaginal hysterectomy, with the implantation in the remaining fallopian tube following vaginal hysterectomy being the most common site. Five cases (9%) noted that there was unprotected coitus a few days before surgery, resulting in an early ectopic pregnancy post hysterectomy. Conclusion Although an ectopic pregnancy after a hysterectomy is a rare event, it is potentially a life-threatening condition. Educating patients about contraceptive use up to the date of hysterectomy may minimise the occurrence of early cases, and bilateral salpingectomy during hysterectomy may potentially reduce the number of late presentations. A high index of suspicion and a low threshold for performing a pregnancy test in all women presenting with clinical symptoms of an ectopic pregnancy, regardless of their hysterectomy status, may lead to earlier diagnosis and fewer complications of this condition.

Shao, E. X., et al. (2017). “A systematic review of ectopic pregnancy after hysterectomy.” Int J Gynaecol Obstet. BACKGROUND: An ectopic pregnancy after hysterectomy is a rare but potentially life-threatening event. Women with this condition might not be appropriately investigated, resulting in delays in diagnosis and treatment. OBJECTIVES: To characterize cases of ectopic pregnancy occurring after hysterectomy. SEARCH STRATEGY: PubMed, Embase, Scopus, and Web of Science were searched using the terms “pregnancy, abdominal” or “pregnancy, tubal” or “pregnancy, ectopic” and “hysterectomy” or “post-hysterectomy” or “post hysterectomy.” SELECTION CRITERIA: Case reports or case series published in English up to October 10, 2016, were included. Patients were included if the diagnosis was confirmed by definitive tests such as serum or urine beta-human chorionic gonadotropin (beta-hCG) testing, ultrasonography evidence of pregnancy, or histology. DATA COLLECTION AND ANALYSIS: Patient characteristics were extracted via a standard spreadsheet. MAIN RESULTS: A total of 57 patients were included in the analysis. Abdominal pain was the predominant symptom. Implantation in a remaining fallopian tube was common. Most patients were managed surgically. CONCLUSIONS: A high index of suspicion and a low threshold for performing a beta-hCG pregnancy test is recommended in all women presenting with clinical symptoms of ectopic pregnancy, regardless of the hysterectomy status. This could lead to earlier diagnosis and fewer complications.

Stankiewicz, M. and M. Whyland (2017). “A review of suspected intraoperative antiseptic burns: A quality improvement review.” ACORN: The Journal of Perioperative Nursing in Australia 30(4): 25-29. The use of antiseptics in theatre is mainstay treatment in reducing cutaneous bioburden and, in turn, preventing surgical site infection and sepsis. Typically, aqueous betadine and chlorhexidine in alcohol are preferred. Aqueous betadine is a broad-spectrum antiseptic with a quick kill rate but is deactivated by organic material on the patient’s skin. More effective than aqueous betadine is chlorhexidine gluconate - it is also a broad-spectrum antiseptic but is not deactivated by organic compounds on the patient’s skin.

Theodore, J. E., et al. (2017). “Paediatric horse-related trauma.” Journal Of Paediatrics And Child Health. Aim: This retrospective cohort study reported on the epidemiology of horse-related injuries for patients presenting to the only tertiary paediatric trauma hospital in Queensland. The secondary outcome was to examine the use of helmets and adult supervision. Traumatic brain injury (TBI) was examined in relation to helmet use. Morbidity and mortality were also recorded. Methods: Included were all patients presenting with any horse-related trauma to the Royal Children’s Hospital in Brisbane from January 2008 to August 2014. Data were retrospectively collected on patient demographics, hospital length of stay (LOS), mechanism of injury (MOI), safety precautions taken, diagnoses and surgical procedures.
performed. Results: Included in the analysis were 187 incidents involving 171 patients. Most patients were aged 12-14 years (36.9%) and female (84.5%). The most common MOI were falls while riding horses (97.1%). Mild TBI (24.6%) and upper limb fractures (20.9%) were common injuries sustained. Patients who wore helmets had significantly reduced hospital LOS and severity of TBI when compared with those who did not wear helmets (P<0.001 and P=0.028, respectively). Morbidity was reported in 7.5% of patients. There were three deaths in Queensland. Conclusion: Helmet use is recommended for non-riders when handling horses, in addition to being a compulsory requirement whilst horse riding. Prompts in documentation may assist doctors to record the use of safety attire and adult supervision. This will allow future studies to further investigate these factors in relation to clinical outcomes.


Objective: The aim of this study was to describe emergency department (ED) activities and staffing after the introduction of activity-based funding (ABF) to highlight the challenges of new funding arrangements and their implementation.

AB- Methods: A retrospective study of public hospital EDs in Queensland, Australia, was undertaken for 2013-2014. The ED and hospital characteristics are described to evaluate the alignment between activity and resourcing levels and their impact on performance.

AB- Results: Twenty EDs participated (74% response rate). Weighted activity units (WAUs) and nursing staff varied based on hospital type and size. Larger hospital EDs had on average 9076 WAUs and 13 full-time equivalent (FTE) nursing staff per 1000 WAUs; smaller EDs had on average 4587 WAUs and 10.3 FTE nursing staff per 1000 WAUs. Medical staff was relatively consistent (8.1-8.7 FTE per 1000 WAUs). The proportion of patients admitted, discharged, or transferred within 4 hours ranged from 73% to 79%. The ED medical and nursing staffing numbers did not correlate with the 4-hour performance.

AB- Conclusion: Substantial variation exists across Queensland EDs when resourcing service delivery in an activity-based funding environment. Historical inequity persists in the staffing profiles for regional and outer metropolitan departments. The lack of association between resourcing and performance metrics provides opportunity for further investigation of efficient models of care.


Autoimmune inflammatory rheumatic diseases (AIIRD), such as rheumatoid arthritis, psoriatic arthritis and ankylosing spondylitis are often complicated by infection, which results in significant morbidity and mortality. The increased risk of infection is probably due to a combination of immunosuppressive effects of the AIIRD, comorbidities and the use of immunosuppressive conventional synthetic disease-modifying anti-rheumatic drugs (DMARDs) and more recently, targeted synthetic DMARDs and biologic DMARDs that block specific pro-inflammatory enzymes, cytokines or cell types. The use of these various DMARDs has revolutionised the treatment of AIIRD. This has led to a marked improvement in quality of life for AIIRD patients, who often now travel for prolonged periods. Many infections are preventable with vaccination. However, as protective immune responses induced by vaccination may be impaired by immunosuppression, where possible, vaccination may need to be performed prior to initiation of immunosuppression. Vaccination status should also be reviewed when planning overseas travel. Limited data regarding vaccine efficacy in patients with AIIRD make prescriptive guidelines difficult. However, a vaccination history should be part of the initial work-up in all AIIRD patients. Those caring for AIIRD patients should regularly consider vaccination to prevent infection within the practicalities of routine clinical practice; © 2017 Royal Australasian College of Physicians.


Autoimmune limbic encephalitis is a rare cause of encephalitic disease. It is associated with various target antigens and is difficult to diagnose, and experience with its treatment is limited. This case report describes a 69-year-old man, who presented with life-threatening hyponatremia and confusion, following several months of gradually worsening faciobrachial dystonic seizures. Faciobrachial dystonic seizures are a well-described feature classically observed in voltage-gated potassium channel autoimmune encephalitis. The presence of chronic hyponatremia without cognitive dysfunction, eventually culminating in an acute episode of encephalopathy and severe hyponatremia, is a pattern of natural history not previously documented in this condition.


Background: Hydrothorax is an uncommon but well-recognized complication of peritoneal dialysis. It is a potentially serious condition that frequently requires cessation of peritoneal dialysis and permanent
transient to hemodialysis. Hydrothorax is produced by movement of peritoneal dialysate through pleuroperitoneal fistulas. Pleural fluid analysis typically detects a high glucose concentration, and contrast imaging reveals tracer uptake transgressing the diaphragm. Experience with the treatment of hydrothorax related to peritoneal dialysis is limited.; Case Report: We describe the case of a 54-year-old female on peritoneal dialysis for end-stage renal failure who developed a hydrothorax soon after beginning treatment.; Conclusion: This case describes a classical presentation of hydrothorax in the context of peritoneal dialysis. Treatment is frequently unsuccessful. All clinicians prescribing peritoneal dialysis should be aware of this complication.;


The safety of our older citizens can be improved by targeting known risk factors.

How well are we caring for older, frail and vulnerable citizens in residential aged care facilities (RACFs)? The retrospective study of deaths in nursing homes during 2000–2013 reported in this issue of the MJA1 is an important review of the quality of care at the end of life. We could be doing better.


Introduction We aim to evaluate the sensitivity and specificity of endometrial thickness and baseline risk factors as a predictor of endometrial abnormalities in symptomatic and asymptomatic postmenopausal women. Methods A retrospective observational study conducted at Redcliffe Hospital, Australia over a 10-year period between January 2003 and December 2012 on postmenopausal women >50 years who have had a histopathological specimen taken for either bleeding or an incidental finding of thickened endometrium (≥4 mm) on ultrasound in the asymptomatic group. The variables of interest were: age, ethnicity, parity, years from menopause, history of diabetes mellitus, hypertension, polycystic ovarian syndrome, weight/body mass index, symptomatic or asymptomatic, use of hormone replacement therapy (HRT), anticoagulants, tamoxifen, endometrial thickness, personal or family history of cancers, Pipelle biopsy, hysteroscopy findings and histopathology and any complications. Endometrial abnormality is defined as either simple or complex hyperplasia with or without atypia or endometrial carcinoma. Results A total of 637 charts were reviewed and inferences were made on two groups: symptomatic (n = 220) and asymptomatic (n = 81). The median endometrial thickness was 6 (4-9) mm and 9 (6-12) mm, respectively. Abnormal pathology was found in 35 patients (15.9%) in the symptomatic group and 6 (7.4%) of the asymptomatic group. The sensitivity and specificity of endometrial thickness in the symptomatic group was 88.6% and 69.2% whereas in the asymptomatic group it was 50% and 89.3%, respectively. For the symptomatic women, a cut-off of 7.1 was identified along with age and endometrial thickness as the variables that are predictive of endometrial abnormalities while for the asymptomatic women, a cut-off of 14.5 was identified with endometrial thickness as the only variable to predict endometrial abnormality. The findings from the receiver operating characteristics curve indicated that each 1 mm increase in endometrial thickness resulted in a 19.9% increase in the odds of having an abnormal diagnosis of either hyperplasia or cancer. Conclusion The study concluded that only endometrial thickness is a significant predictor of endometrial abnormality in both groups. On this cohort of patients, none of the risk factors had any association with an increased risk of endometrial abnormality. As the risk of cancer is <1% in non-HRT users with endometrial thickness <5 mm (symptomatic group), and <6.7% in <11 mm (asymptomatic group), routine invasive procedures should not be undertaken. Given the consequences of undiagnosed malignancy, the aim is to maximise sensitivity, while not increasing unnecessary invasive procedures.


BACKGROUND: Transperineal rectocele repairs, either as isolated fascial repair or in combination with mesh augmentation, are hypothesized to reduce the risk of complications compared with alternative techniques. AIM: The aim of this study was to ascertain long-term success and complication rates following transperineal rectocele repairs. METHOD: A literature search of PubMed and Embase was performed using the terms 'transperineal rectocele', 'rectocele', 'transperineal' and 'repair'. Prospective studies, case series and retrospective case note analyses from 1 January 1994 to 1 December 2016 were included. Those that detailed outcomes of the transperineal approach or compared it to transanal/transvaginal approaches were included. The main outcome measures were reported complications and functional outcome scores. RESULTS: A total of 14 studies were included. Of 566 patients, 333 (58.8%) underwent a transperineal rectocele repair and 220 (41.2%) a transanal repair. Complications were identified in 27 (12.3%) of the 220 transanal repairs and in 41 (12.3%) of the 333 transperineal repairs. A significant complication following transperineal repair was noted in eight studies.
There are not enough data to make a reliable comparison between mesh and non-mesh transperineal repairs or to compare biological and synthetic mesh use. LIMITATIONS: Outcome reporting differed between studies, precluding a full meta-analysis. CONCLUSION: Transperineal rectocele repair offers an effective method of symptom improvement and appears to have a similar complication rate as transanal rectocele repair. Concomitant use of synthetic and biological mesh augmentation is becoming more common; however, high-quality comparative data are lacking, so a direct comparison between surgical approaches is not yet possible.