AP009
Mifepristone and misoprostol for the termination of pregnancy at 64–140 days from Lmp
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Introduction We aim to legalise medical termination of pregnancy (TOP) between 10 and 20 weeks of pregnancy in India by demonstrating its safety, efficacy and acceptability as part of a prospective randomised multicentric trial.

Methods After ethical approval, screening women for eligibility for the trial was followed by informed consent and randomisation into one of two groups (Group A 24 hours and Group B 48 hours). After assessing for vitals, they were given tablet Mifepristone. This was followed 24 or 48 hours later by tablet Misoprostol as per group allocation. For this, the patient was admitted to hospital and given vaginal and sublingual misoprostol (as per protocol) till complete expulsion of fetus and placenta.

Patients were given a diary card at discharge (to note for bleeding, pain, nausea, vomiting, diarrhoea, dizziness, rash and chills) and followed-up at 2 weeks or earlier if there were any complications. Data were maintained regarding age, parity, previous caesarean delivery, reason for TOP, days from last menstrual period, induction-abortion interval, gross evaluation of the fetus, need for curettage, side-effects of drugs and satisfaction with procedure.

Results In all 105 women were screened for eligibility, of whom 21 were excluded as they did not meet the inclusion criteria. Four dropped out for personal reasons and 80 women completed the study over a period of 18 months. After randomisation using blinded envelopes, 41 patients were allocated to Group A and 39 to Group B. Mean duration of pregnancy was 106.2 (SD + 17.0) days. Majority of the women were para 3 or less, 27% had a previous caesarean and 15% had an anomalous baby. The most common reason for seeking TOP was contraceptive failure (80%). Data for the two groups were compared regarding induction-abortion interval (IAI) and side-effects. IAI was significantly shorter in Group B (P = 0.009). Only one woman failed to abort the fetus with this regimen and needed a surgical evacuation.

Three women required readmission for curettage due to delayed bleeding. At the 2-week follow-up visit, diary card review showed that 83% of patients were asymptomatic. Ten percent of women had an extra visit before or after the follow-up visit for symptoms like breast engorgement and urinary infection. Patient satisfaction with either regimen was 97.5%. There were no cases of pelvic sepsis or uterine perforation.

Conclusions Medical TOP using mifepristone and misoprostol may safely be extended beyond the current legal limit of 9 weeks of pregnancy as it is safe, efficacious and well accepted by patients.

Category B: Poster Presentations: Early Pregnancy and Acute Gynaecology

BP010
Is hyperemesis gravidarum associated with adverse perinatal outcome?
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Introduction The objective was to evaluate the relationship between hyperemesis gravidarum (HG) and perinatal outcome. Eighty percent of women suffer from nausea and vomiting during pregnancy but hyperemesis gravidarum (HG) affects around 1–3% of pregnant women. HG may lead to starvation, dehydration, possibly severe ketonuria, haemococoncentration, liver function test abnormalities and puerperal blues. Regarding perinatal outcome, previously we thought that neonates do well; usually they do not suffer. Gynaecologists and the woman can face a challenging time in early pregnancy and in the puerperium. It may affect the physical and mental health of the woman and also it has adverse effects on the unborn baby.

Methods A prospective cohort study of 700 pregnant women were carried out in Zainul Hque Sikder Womens’ Medical College Hospital (ZHSWMCH) during 2015 to 2016. In all, 330 with HG and 370 with no HG were enrolled. All were 8–16 weeks of gestation. Multiple pregnancy and presence of any serious illness like heart disease, hypertension or diabetes were excluded from the study. HG was diagnosed if severe vomiting in pregnancy associated with dehydration, electrolyte–metabolic imbalance and or weight loss >5% (Fairweather criteria). The PUQE score was used to determine whether the nausea and vomiting of pregnancy is mild, moderate or severe HG. Throughout the antenatal and postnatal period was monitored in a predefined protocol, data were analysed by SPPR. Forty controls dropped out.

Results Neonatal outcomes like small-for-dates (89 [27.0%] versus 7 [2.1%; P < 0.001), intrauterine growth restriction (52 [15.8%] versus 10 [3.0%; P < 0.001) were significantly higher in HG and preterm labour (45 [13.6%] versus 40). Birth defects (2 [0.6%] versus 1 [0.3%; ns]) were higher in HG but this was not statistically significant. Apgar score < 7 (1.2 versus 1.2, 95% CI), death (0 versus 0) were similar and baby resuscitation (11.8 versus 8.8; 95% CI 3.0 [1.8–7.7]), NICU admission (6.4 versus 5.8 95% CI 0.6–3.1; – P1.2) were not much different. Women suffering from HG had puerperal blues (100 [14.3% versus 0%; P < 0.001]).

Conclusion Previously we thought that HG affects only mothers, and that neonates escaped, but recently this was challenged by several studies and also by our study. It showed that HG is associated with significant increase in small-for-dates, intrauterine growth restriction and preterm labour. Though NICU admission, baby resuscitations are more and miscarriage is less in HG but not significant. Congenital defect and death are not related to HG. So along with severe maternal effects neonates have adverse health outcomes. Puerperal blues in affected women may further complicate the neonatal wellbeing. Obstetricians need to be vigilant while treating women with HG.
BP011
Prophylactic use of antibiotic for incomplete and missed miscarriage, before medical and surgical management: a randomised controlled trial
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Introduction Miscarriage is defined as loss of a pregnancy before the achievement of viability. It is a common gynaecological problem, which we encounter in day-to-day practice. When its management is considered, post-miscarriage care is challenging because of its complications such as pelvic sepsis. Even though prophylactic antibiotic use is an answer for pelvic sepsis, there is no consensus on its usage.

Objective To determine the effectiveness of prophylactic doxycycline before surgical and medical management of incomplete and missed miscarriage, in view of reducing the post-miscarriage pelvic infections.

Design A randomised controlled trial.

Setting Professorial Gynaecology Unit, Teaching Hospital, Peradeniya, Sri Lanka.

Method Three hundred and ninety-four women with a diagnosis of incomplete (277) and missed (117) miscarriage, who fulfilled the criteria and consented, were randomised into two groups. Patients in the intervention arm (200) were given a single dose of doxycycline (200 mg), while patients in the control arm (194) were given a single dose of placebo, 1 hour before the medical or surgical management of miscarriage. Post-procedure pelvic infection was assessed using clinical parameters within 3 days of assessment (4.06%). Seven patients were in the doxycycline group (1.77%) and nine were in the placebo group (6.18%) (2.28%). Post-intervention pelvic infection rate within 2 weeks of assessment (4.5%) followed by monitoring of b-hCG levels to ensure no persistent tissue or enucleation of gestation sac and products, and coagulation of bleeding base can be performed. This should be followed by monitoring of b-hCG levels to ensure no persistent trophoblastic tissue. In this situation the specimen is unlikely to show any ovarian tissue on histology. Histology confirmed chorionic tissue confirming ovarian ectopic pregnancy. Postoperatively she recovered well and b-hCG levels came back to normal.

Results Statistically significant difference was not detected in relation to age, parity, number of children, period of amenorrhoea, type of miscarriage or type of interventions in between the two groups. Sixteen patients were lost to follow-up at 2 weeks of assessment (4.06%). Seven patients were in the doxycycline group (1.77%) and nine were in the placebo group (6.18%) (2.28%). Post intervention pelvic infection rate within 3 days was 4% (8/200) in the doxycycline group and 6.18% (12/194) in the placebo group. The difference was not statistically significant (P = 0.367). Post-intervention infection rate within 2 weeks for the doxycycline and placebo groups were respectively 4.5% and 8.7%. This was also statistically not significant (P = 0.104).

Conclusion The study revealed that antibiotic prophylaxis before medical and surgical management of miscarriage was unable to obtain a statistically significant reduction in post-miscarriage pelvic infections.

Funding Self-funded.

BP012
Ruptured ovarian ectopic pregnancy: conservative laparoscopic management
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Background Preoperative diagnosis of ovarian ectopic pregnancy is difficult. Differentiating ovarian ectopic pregnancy from small haemorrhagic ovarian cyst or corpus luteum during ultrasound or laparoscopy may be challenging. Ovarian ectopic pregnancy can be classified into superficial and intrafollicular type. The traditional method of treatment was surgical removal in the form of oophorectomy or wedge resection. With advances in the diagnosis and laparoscopic management of ectopic pregnancies medical and conservative surgical management is possible.

Case A 29-year-old nulliparous lady presented to the Emergency department with a history of 63 weeks of amenorrhoea and severe lower abdominal pain associated with nausea. On examination she was haemodynamically stable and abdomen was soft with tenderness in the pelvic area with no guarding or rigidity. Serum b human chorionic gonadotrophin (b-hCG) was raised 3196 IU/l. A transvaginal ultrasound scan showed an empty uterine cavity with moderate amount of echogenic free fluid, and a small cystic area of 19 × 14 mm in the left ovary and in close proximity to this cystic structure was an another echogenic ring with small anechoic centre (doughnut) with peripheral vascular flow. On laparoscopy both tubes were normal and a ruptured haemorrhagic lesion on the surface of the right ovary with bleeding edges was noted. The contents were enucleated and base and edges were diathermised. Histology confirmed chorionic tissue confirming ovarian ectopic pregnancy. Postoperatively she recovered well and b-hCG levels came back to normal.

Conclusion Primary ovarian pregnancy occurs in 1 : 7000 pregnancies or approximately 0.5–3% of ectopic pregnancies. High index of clinical suspicion based on history and ultrasound findings may help when making the diagnosis. In superficial ovarian ectopic pregnancy laparoscopic removal of trophoblastic tissue or enucleation of gestation sac and products, and coagulation of bleeding base can be performed. This should be followed by monitoring of b-hCG levels to ensure no persistent trophoblastic tissue. In this situation the specimen is unlikely to show any ovarian tissue on histology and therefore the fourth criteria suggested by Spielberg will not be applicable. Falling of b-hCG after removal of trophoblastic tissue has also been suggested as one of the criteria and perhaps it should replace the need for finding ovarian tissue in histology.
BP013
Awareness of the signs and symptoms of ectopic pregnancy in a female population in East London
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Introduction
Early presentation, and hence patient awareness, of the disease is central to the effective management of ectopic pregnancy (EP). In spite of being such a pivotal factor, very few studies have assessed the knowledge base of the general public. The modern management of EP should be patient-centred and cost-effective. However, this is not possible as 5–10% of patients still present with haemodynamic instability as a result of late presentation. This may be due to lack of awareness of signs and symptoms of EP. Assessing the degree of awareness would lead towards detection of the deficits and would enable a targeted patient education programme.

The objective was ascertain the awareness of signs, symptoms and implications of EP in a female population of reproductive age in east London.

Methods
A focus-grouped, structured questionnaire survey of women of reproductive age, in an outpatient setting of a university teaching hospital in east London—either at the Gynaecology Outpatient Clinic, Sexual Health Unit, or the Emergency Gynaecology Unit. The questionnaire consisted of 25 non-weighted questions and an awareness score assigned 1 point for every correct answer. Some questions contained subsections leading to a total score out of 34. These scores were the focus for statistical analysis.

Results
Comparing the test scores from 121 women’s responses, the mean score for the highest-represented ethnicities were 16.31 (White), 12.75 (Bangladeshi), 12.47 (Pakistani), 11.75 (White/Black African) and 11.36 (Indian). All marks ranged between 0% and 82%. Besides ethnicity, age did not appear to be a defining factor (P = 0.70) and neither did the outpatient location (P = 0.70). Higher income (P = 0.0079) and level of education (0, 0.04) did lead to elevated awareness of EP. Remarkably, obstetric history did not infer increased awareness, even with previous miscarriage (P = 0.46) or previous EP (P = 0.42). Parity, too, did not reach significant results (P = 0.57).

Conclusion
EP is usually more prevalent in lower income, lower educated and black or Indian populations, yet it appears that these population sections may need more public health education, aimed at EP, as they are the least knowledgeable regarding the topic. In addition, better patient education upon discharge following a miscarriage or EP may be required to ensure that these patients are highly aware of the signs and symptoms of EP in case of future recurrences.

BP014
Changing trend of management of ectopic pregnancy: 12 months’ experience in a local general hospital
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Introduction
The incidence of ectopic pregnancy (EP) is 1–2% of all pregnancies. It remains the leading cause of maternal deaths during the first trimester of pregnancy. Well-established diagnostic algorithms enable expectant, medical and surgical management. Each therapeutic option has been shown to be safe, effective and economical; however, when it fails costs and morbidity rise. We present our department management outcomes of EP.

We aim to assess the quality of clinical care provided and assessing patient choice and uptake rate of expectant, medical and surgical management of the EP.

Methods
This was a prospective cohort database analysis of women who had EP management either expected, medically or surgically. Patient characteristics and risk factors, clinical history, biochemical and ultrasound findings, and training issues were extracted from our database. Substandard care categories classified as misdiagnosis and delay in diagnosis.

Results
Sixty-five EP were managed during the 1-year study period (June 2015 to June 2016). The most common presentations were bleeding (78%) and pain (55%). Twenty-three percent of patients had no documented risk factors for EP, 20% had previous EP and 77% had multiple risk factors. Fifty-four percent of suspected EP were reviewed within 4 hours of presentation. At 36%, a single serum β-hCG range was between 72 IU to 8,545 IU, in addition to ultrasound features that confirmed EP. Most (98%) of the EP were tubal. The success rate was 3% expectant, 17% medical and 80% surgical management. The 30% (20/65) of those offered methotrexate, of which two had a second dose and 45% failed treatment underwent surgical treatment. The mean time since administration of methotrexate to resolution was 28 days for those successfully treated. Among those who underwent surgical management, there was a 94% laparoscopy rate, two negative laparoscopies, two laparotomies and one surgical evacuation for scar EP under ultrasound guidance. Eight percent (four women) were haemodynamically unstable with haemoperitoneum >2500 mL and underwent laparoscopy (two women) or laparotomy (two women) and all received blood transfusion. Sixty-four percent of trainees were competent undertaking laparoscopic management of the EP.

Conclusion
Women’s choices significantly influence the treatment options when EP is diagnosed. Our results suggest that nonsurgical treatments are an acceptable treatment option and should be encouraged. Laparoscopy remained the gold standard for management of symptomatic EP. The overall laparoscopy rates for haemodynamically stable and unstable patients were 92% and 50%, respectively. This difference was statistically significant (P < 0.001).
BP015
Patient satisfaction with virtual follow-up care after an ectopic pregnancy
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Introduction An ectopic pregnancy is a common gynaecological emergency, affecting up to 1 in 80 pregnancies. After surgery most women are discharged from hospital without any follow-up care and these women are usually extremely anxious during their next pregnancy. Virtual telephone clinics are increasingly being used instead of face-to-face clinics as a convenient, efficient option to review patients. We have set up this service to review all women who undergo surgical management of an ectopic pregnancy in our hospital.

We aim to assess effectiveness and patient satisfaction of virtual telephone clinics for women who had surgical management of an ectopic pregnancy.

Methods A prospective audit of our registrar-led telephone clinic between 1 January and 31 December 2015 at a London University Hospital.

Results Sixty-eight women who had surgical management were followed-up. All were reviewed by clinical staff before discharge and were often seen by the gynaecology nurse who gave them information about ectopic pregnancies and support networks. All the women were contacted in the evening. Forty (59%) responded to the telephone consultation. A standardised questionnaire regarding symptoms of bleeding, pain, scar healing, emotional support and return to work were discussed; 98% felt they had adequate information with 95% stating satisfaction and recommendation of the service to others with only 7.5% (three women) preferring a face-to-face follow-up. Seven women (11%) were followed-up in gynaecology outpatients for co-existing pathology and six (9%) in our emergency gynaecology unit as they had salpingotomies.

Conclusion Virtual telephone clinics are an effective and efficient way of reviewing patients. Our successful experience has allowed us to create dedicated appointment times for patients, which will generate revenue from booked follow-up appointments. To improve documentation we will be introducing electronic documentation with dictated letters to all patients. We hope this compassionate follow-up care will help reduce anxiety in women after having an ectopic pregnancy.

BP016
The management of pregnancy of unknown location: a clinical audit
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Background The incidence of ectopic pregnancy is approximately 1–2% of all pregnancies with a mortality rate of 0.2 per 1000 ectopic pregnancies. Where pregnancy is confirmed on serum β-human chorionic gonadotrophin (β-hCG) with no sonographic features a diagnosis of pregnancy of unknown location (PUL) is provided. This could include an ectopic pregnancy as yet not visualised on ultrasound.

Setting Central London Teaching Hospital.

Aims and Objectives To ensure all women diagnosed with PUL received appropriate evidence-based management. We evaluated the adherence of management against local guidelines for diagnosis and management of PUL.

Standards 1. The percentage of patients given a diagnosis of PUL after their first ultrasound. 2. The percentage of patients with a PUL who have a β-hCG and progesterone sent at the time of diagnosis. 3. The percentage of women who were managed in accordance with our local guidelines.

Methods Design: retrospective case review of all PUL diagnoses made between May and July 2016. Data sources: hospital log of PUL, patient records, electronic laboratory and ultrasound systems. Data analysis: Microsoft EXCEL.

Results A total of 651 new patients were seen during the audit period and 84 (13%) were diagnosed with PUL. At the Royal Free Hospital we use β-hCG with progesterone to risk assess all PUL. The percentage of patients diagnosed with PUL at the first scan was 95%. The percentage of patients receiving a β-hCG and progesterone investigation diagnosis of PUL was 90% while the overall adherence to local guidelines for all PUL was 15%. The largest group of patients (n = 39) were those with an β-hCG >25 milli-international units per millilitre and a progesterone <20 nanogram per millilitre and are recommended to have a serum/urine β-hCG in 7 days. Adherence was poor at only 10% of this subgroup. The most frequent breech of guideline was the over investigation of these low risk patients with serial β-hCG every 48 hours of these low-risk patients with serial β-hCG every 48 hours.

Conclusions Over-investigation and overuse of resources is the largest breech in the management of stable patients with PUL. Patient anxiety can be reduced through avoidance of unnecessary excessive investigation.

Recommendations Guideline recommendations will be summarised and circulated to the department. The emergency gynaecology unit will nominate a PUL champion for 6 months who aims to improve the evidence-based care of women with PUL. A teaching session on PUL and management strategies will take place and a repeat audit will follow this brief educational intervention.

BP017
Outcomes from pregnancies of unknown location managed according to predetermined cut-off values for the 48-hour serum human chorionic gonadotrophin ratio
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Introduction and Methods A retrospective study at an early pregnancy service at a regional Australian hospital was performed to evaluate the use of the serum human chorionic gonadotrophin
Aims and Methods

To compare the management of patients admitted with OHSS with that of the guidelines published by the Royal College of Obstetricians and Gynaecologists (RCOG). Using a retrospective case note review, we assessed the management of patients admitted with OHSS to The Princess Alexandra Hospital between January 2011 and May 2015.

Results

The median age (range) of the 26 patients included was 32.5 (22–39) years; 88.5% (23/26) were white Caucasian, 7.7% (2/26) were South Asian, and 3.8% (1/26) were of Afro-Caribbean descent. The average length of admission was 4 (1–11) days. Overall, 54% (14/26) of patients had severity documented whereas 46% did not (12/26). The patients that did have severity of OHSS documented, 64% (9/14) were categorised as mild, 29% (4/14) moderate and 7% (1/14) severe. All women had consultant-led care with daily clinician review, 92% (24/26) had thromboprophylaxis prescribed, 96% (25/26) had regular analgesia prescribed and 50% (13/26) had regular antiemetics prescribed. From a multidisciplinary perspective, 65% (17/26) had fluid balance charts yet only 53% (9/17) had fluid input/output documented daily. Further, 69% (18/26) had daily abdominal girth measurement and 65% (17/26) had daily weight measurements. All women had a pelvic ultrasound scan and routine biochemical investigations to include full blood counts, renal profile (U&Es) and liver function. To investigate synthetic liver function only 42% (11/26) had a clotting screen performed. Lastly, none of the patients over the 5-year period required fluid drainage via paracentesis or further surgical management.

Conclusion

OHSS remains a relatively rare presentation to the Princess Alexandra Hospital. The majority of cases admitted as inpatients were classified as mild or moderate in severity. According to RCOG guidance, these patients could have been managed in an outpatient setting, so avoiding unnecessary admission. The majority of patients who were admitted had daily review and appropriate management in accordance with RCOG guidance. Subsequently, no cases of critical OHSS were identified over the period examined.

BP019

Review of the management and outcome of women with caesarean scar pregnancy at a single centre in Dubai

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Introduction

Scar pregnancy is defined as a pregnancy developing at the site of a previous caesarean or hysterotomy scar in the uterus. The incidence is around 1 in 2000 pregnancies and it is one of the rarest form of ectopic pregnancies. Delayed diagnosis is common, leading to life threatening complications like scar rupture and haemorrhage.

The objective was to analyse the effectiveness of medical management of caesarean scar pregnancy (CSP) with methotrexate.

Methods

We conducted a retrospective file review of all CSP admitted to Latifa hospital, Dubai between January 2013 to January 2016. All of them had a diagnosis confirmed by radiologists, based on the typical ultrasound features described by

BP018

The management of patients admitted with ovarian hyperstimulation syndrome

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Introduction

Ovarian hyperstimulation syndrome (OHSS) is a systemic disease resulting from vasoactive products released by hyperstimulated ovaries. Appropriate classification, risk stratification and subsequent management in patients presenting with OHSS improves symptomatic management and minimises unnecessary inpatient admission.

Aims and Methods

To stratify the management of clinically stable women presenting with a pregnancy of unknown location (PUL). Inclusion criteria: no evidence of intra- or extraterine pregnancy or haemoperitoneum on transvaginal scan (TVS), hCG <2000 IU at presentation, haemodynamically stable. The following three management strategies, using predetermined 48-hour hCG ratio cut-offs, were used: 1. serum hCG ratio <0.79 = discharged on Day 2 with a follow-up phone call in 4 weeks (where Day 0 = 0-hour hCG and Day 2 = 48-hour hCG); 2. serum hCG ratio 0.80–0.99 = repeat serum hCG level in 1 week + repeat TVS; 3. serum hCG ratio ≥ 1 = repeat TVS on Day 7. Women with worsening symptoms were asked to return sooner.*

Results

A total of 293 women presented to the EPAS from January to September 2016. Forty-seven (16.0%) of these women presented as a PUL at the initial visit, and 48-hour hCG ratio was available for 44/47 (93.6%) women. Outcomes for the three 48-hour hCG ratio management strategies were as follows. 1. Twenty (45.5%) women had a 48-hour hCG ratio <0.79. All 20 women were discharged on Day 2 with a failed PUL; two of these women were lost to follow-up. 2. Five (11.4%) of the 44 women had a 48-hour hCG ratio between 0.80 and 0.99; four (80.0%) women were lost to follow-up. 3. Nineteen (43.2%) women had a 48-hour hCG ratio ≥ 1. Repeat TVS confirmed 11/19 (57.9%) women had an intrauterine pregnancy and 4/19 (21.1%) women had an ectopic pregnancy; 4/19 (21.1%) had a failed PUL. One woman with a failing PUL was lost to follow-up on Day 4. There were no complications in any of the three groups.

Conclusion

Early pregnancy services in Australia and abroad face the challenges of a rotating workforce and finite resources. This study suggests that the use of cut-offs for the 48-hour serum hCG ratio is a consistent and safe approach to stratify the management of stable women presenting with a PUL. Larger prospective external validation studies are needed.*Reid S, Casikar I, Cohen S, Condous G. OP05.04 The use of serum hCG ratio to stratify the subsequent management of women with pregnancy of unknown location (PUL). Ultrasound Obstet Gynaecol 2012;40(S1): 69–70.
we also collected data on emergency readmission to hospital and management and subsequent outcomes. In examining outcomes symptoms, gestational age on scan, patients' choice of treatment was based on a case-to-case basis, following department protocol and ACOG recommendations. This was in the form of intracardiac Kcl to the fetus, intraleisional and systemic methotrexate single or multidose regimen with folic acid, with \( \beta \)-human chorionic gonadotrophin levels and ultrasound follow-up in the early pregnancy unit.

**Methods**

Patients attending EPAS with a diagnosis of missed miscarriage are routinely offered expectant (EM), medical (MM) or surgical (SM) management, and more recently manual vacuum aspiration (MVA). There is very little guidance, however, on the success rates and potential alternative outcomes of each management option, which would be of use when counselling women, enabling them to make an informed decision. We examined the outcomes of patients attending an early pregnancy assessment service (EPAS) with an ultrasound diagnosis of non-continuing pregnancy.

**Results**

Fifty-five patients were identified over the 2-month period. Of these, 34.5% opted for EM, 23.6% for MM, 30.9% SM and 10.9% MVA. In the EM group, 73.6% had a spontaneous complete miscarriage while 26.3% underwent emergency surgical management; 36.8% of patients in the EM group attended hospital as an emergency because of heavy bleeding, with only one patient requiring blood transfusion. Of women who opted for MM, 69.2% had a complete miscarriage, with the remaining 30.7% requiring elective surgical management because of failed MM. Of SM patients, 23.6% had a spontaneous miscarriage before surgery. In the MVA group, no patients reattended as an emergency and all had successful management with MVA as planned, although this was a relatively small group (\( n = 6 \)) of patients.

**Conclusion**

A significant number of women who opt for expectant management of miscarriage will present as an emergency, many of whom will require surgical management because of heavy bleeding. These data may influence patients’ choice of management. MVA may offer a more acceptable and reliable alternative to expectant management but more data are needed to draw statistically robust conclusions.

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**BP020**

**Management of missed miscarriage: examining outcomes of expectant, medical and surgical management in EPAS setting**

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**Introduction**

Women diagnosed with missed miscarriage are routinely offered expectant (EM), medical (MM) or surgical (SM) management. There is very little guidance on the success rates and potential alternative outcomes of each management option, which would be of use when counselling women, enabling them to make an informed decision. We examined the outcomes of patients attending an early pregnancy assessment service (EPAS) with an ultrasound diagnosis of non-continuing pregnancy.

**Methods**

Patients attending EPAS with a diagnosis of missed miscarriage were retrospectively identified over a 2-month period. A case note audit was completed to examine presenting symptoms, gestational age on scan, patients’ choice of management and subsequent outcomes. In the other outcomes we also collected data on emergency readmission to hospital and requirement for blood transfusion.

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**BP021**

**The antibiotic sensitivity pattern and use of antibiotics in women with asymptomatic bacteriuria in pregnancy**

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**Introduction**

Nitrofurantoin has been recommended as a first-line therapy in Sri Lanka for urinary tract infections in pregnancy but it is not used frequently.

**Methods**

At the Colombo South Teaching Hospital a descriptive cross-sectional study was carried out from June 2015 to April 2016 on 98 consecutive pregnant women between 8 and 24 weeks of gestation, residing in Colombo district and presenting with no urinary symptoms suggestive of urinary tract infection at the time of urine collection but having a positive urine culture (colony count of \( \geq 10^5 \) /mL of urine). The antibiotic sensitivity of the identified pathogens was studied.

**Results**

The commonest organisms found were coliforms (\( n = 79 \)). The other organisms identified were staphylococci (\( n = 10 \)), streptococci (\( n = 7 \)) and enterococci (\( n = 2 \)). All the organisms were sensitive to nitrofurantoin. However, nitrofurantoin was only used in 57 women.

**Conclusion**

As all the organisms were sensitive to nitrofurantoin, prescribing practices need to be changed to include nitrofurantoin as the first line of therapy for asymptomatic bacteriuria of pregnancy.
Poster Presentations

**BP022**

**Rarest of the rare—molar pregnancy followed by choriocarcinoma, a medical challenge**

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**Background** Gestational trophoblastic disease comprises complete mole, partial mole, invasive mole, choriocarcinoma and placental site trophoblastic tumour. Asian women have a higher incidence (1/387 versus 1/752 live births). Choriocarcinoma is slightly higher in women aged <18 years and much higher in those aged >45 years.

**Case** A 37-year-old woman presented to the Early Pregnancy Assessment Unit (EPAU) with a 4-day history of vaginal bleeding and positive urine pregnancy test. Para 1, one previous caesarean section and a complete molar pregnancy, diagnosed following surgical evacuation for missed miscarriage. Referred to tertiary centre, Sheffield, for chemotherapy and follow-up. β-human chorionic gonadotrophin (β-hCG) was <1 for a year. She subsequently became pregnant the following year and presented to EPAU with similar history of 5 days vaginal bleeding and positive urine pregnancy. Pelvic ultrasound scan showed thickened endometrium 9 mm but no intrauterine gestational sac. Serial β-hCG was raised but suboptimal trend. She was diagnosed as pregnancy of unknown location. Medically treated with methotrexate. Before treatment, endometrial pipelle biopsy was taken given her previous history of complete molar pregnancy. Histopathology showed secretory endometrium containing a single, slightly hyalinised focus that appeared to be intermediate trophoblast. No syncytiotrophoblast or cytotrophoblast was identified or any necrosis seen. It could be regarded as placental site nodule but in this situation to be considered as residual trophoblastic disease. Second opinion was trophoblastic nodule composed of non-villous/intermediate trophoblast. No mitotic figures seen. It was difficult to assume that residual trophoblastic disease from the previous molar pregnancy was not picked up during follow-up. A second dose of methotrexate was given due to suboptimal fall and subsequent rise of β-hCG. During follow-up, patient complained of shortness of breath. A chest X-ray showed a 2 cm nodule in the right lower lobe, query metastasis. Referred to tertiary centre, had right lung wedge resection. Histology confirmed choriocarcinoma. Her β-hCG was normal 3 weeks following resection.

**Conclusion** This was a very unusual case. Reviewing the sequence of events, it was difficult to determine whether this was a new pregnancy or persistent gestational trophoblastic disease from previous molar pregnancy. Molar pregnancy is likely to develop into persistent trophoblastic disease if β-hCG is present in blood for >12 weeks after removal of molar pregnancy or molar pregnancy occurred within 12 months of previous pregnancy. However, it has very high cure rate, about 98–100%, and low risk of recurrence.

**BP023**

**Obstetric outcomes in women with first trimester vaginal bleeding—a retrospective study**

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**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 15.8% 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.
BP024
A case of ectopic pregnancy following hysterectomy
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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 were normal. Haemoglobin was 118 g/l. Pelvic ultrasound revealed an 87 mm, ill-defined heterogeneous area superior to the vaginal vault. Magnetic resonance imaging of the abdomen showed a non-specific, heterogeneous mass abutting the uterine stump. Appearance, although relatively non-specific, was 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 germin cell tumour could not be excluded. Tumour markers were normal except for a CA125 of 48 U/L. Haemoglobin was 118 g/l. Pelvic ultrasound revealed an 87 mm, ill-defined heterogeneous area superior to the vaginal vault. Magnetic resonance imaging of the abdomen showed a non-specific, heterogeneous mass abutting the uterine stump. Appearance, although relatively non-specific, was suggestive of haemorrhage. Although consensual sexual intercourse is largely safe, occasionally it may be associated with significant morbidity and mortality. The various injuries caused by sexual intercourse include vulvovaginal injuries, vaginal evisceration, haemopteritoneum, pneumopteritoneum, 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), haemopteritoneum (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.
BP026
Management of first trimester miscarriage in a tertiary hospital in Cape Town, South Africa—a prospective observational study
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Objective  To assess effectiveness and adverse events with surgical, medical and conservative management options in a prospective observational study of women with first-trimester miscarriage presenting to a tertiary public gynaecology service.

Design  Prospective observational study.

Setting  Tygerberg Hospital, a public tertiary hospital in Cape Town, South Africa.

Population  A total of 157 women with stable and unstable first-trimester miscarriage presenting to the acute, or early pregnancy service.

Methods  Patients were included prospectively. Names were cross-checked with clinic and theatre registers, information was captured in Excel, and subsequently analysed with SPSS software package.

Main outcome measures  Days until complete miscarriage; proportion of patients completing miscarriage with original method; and complication rate.

Results  A total of 157 women were included in the study; 32% surgical, 40% medical and 28% conservative management. Median days until complete miscarriage was 1 for surgical, 10 for medical and 18 for conservative. All patients who started in the surgical group completed miscarriage in that category, 75% for medical and 18.4% for conservative. Overall complication rates: 10.2% blood transfusion rate, 5.1% sepsis rate, 1.3% misoprostol side-effects, and a 0.6% re-evacuation rate.

Conclusion  Surgical management is the quickest and most effective (1 day, [1–66]), medical management is longer (10 days, [1–105]), conservative management is longest at 18 days (1–66). Given the wide range, it is important to counsel patients so that the safest option in their social context is used. Surgical management has the highest complication rate, reflecting that this is the primary management for our unstable patients with sepsis and haemorrhage. In the appropriately selected stable patient who is able to follow-up, medical and conservative management are good alternatives to surgical management. In our context where loss to follow-up is a big problem, and access to theatre can be challenging, an adequately staffed procedure room open for use for 24 hours would aid service delivery to be able to provide the surgical option to those who need it or choose it.

BP027
Caesarean scar ectopic pregnancies: a 3-year case series in KK Women’s and Children’s Hospital, Singapore
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Introduction  The objective was to describe our 3-year experience in the diagnosis, management, and outcomes of 26 cases of caesarean scar ectopic pregnancies (CSEP) presenting in our tertiary centre.

Methods  All medical records and sonographic reports of pregnant women diagnosed with a CSEP in our centre over the 3 years from June 2013 to June 2016 were retrieved and reviewed. Results were tabulated and analysed.

Results  Twenty-six cases of CSEP were diagnosed over 3 years. Seventeen (65.4%) patients presented with per vaginal bleeding with or without abdominal pain, four (15.4%) with abdominal cramps and five (19.2%) without symptoms. The mean maternal age was 33.9 years with gravidity ranging from 1 to 5. Sixteen (61.5%) had one previous caesarean section and ten (38.5%) had two or more previous caesarean sections. Of these 26 cases, ten (38.5%) underwent laparoscopic-guided evacuation of uterus, four (15.4%) hysteroscopic-guided evacuation of uterus, three (11.5%) ultrasound-guided injection of methotrexate and three (11.5%) had systemic injection of methotrexate. There was one (3.8%) case each of laparoscopic resection of ectopic, hysteroscopic-guided evacuation of uterus followed by laparotomy and excision of ectopic, systemic injection of methotrexate followed by laparoscopic-guided evacuation of uterus, laparoscopic-guided evacuation of uterus followed by systemic methotrexate, and ultrasound-guided injection of methotrexate followed by laparoscopic-guided evacuation of uterus leading on to total laparoscopic hysterectomy. Lastly, one case did not receive treatment after requesting for discharge against medical advice and did not attend follow-up. Success of treatment was documented in 20 (76.9%) of the cases with a negative pregnancy test. Five (19.2%) however were lost to final follow-up but displayed down-trending human chorionic gonadotrophin levels.

Conclusion  Although CSEP is one of the rarest form of ectopic pregnancies, there has been an increasing number of cases diagnosed over the years. This reflects the rising number of caesarean sections being performed for various indications. Hence, it is of the utmost importance to raise awareness among clinicians, allowing early detection with appropriate management and follow-up.

BP028
A case series on interstitial ectopic pregnancy. A new novel approach for laparoscopic treatment—a single-centre study
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Six cases of interstitial ectopic pregnancies (IEP) were identified over an 18-month period in a large district general hospital under the care of an advanced laparoscopic surgeon. All cases had transvaginal ultrasound scans to confirm the IEP using the Timor-Tritsch et al. criteria. Expedited theatre preparation was facilitated for all cases with perioperative medical management of 400 μg misoprostol per rectum at anaesthetic induction. All six patients had laparoscopic approach to the abdomen using modified Palmer’s point for entry, where the Veress needle is inserted 8 cm
lateral from the midline and 4 cm inferior to the costal margin at the left upper quadrant of the abdomen. Operative laparoscopy revealed two ruptured IEPs with an average of 3 L of haemoperitoneum within the abdominal cavity before laparoscopic surgery.

As IEPs implant in the interstitial part of the fallopian tube, which is located in the uterine wall, the area has a rich blood supply by the Sampson artery, which is a tributary of both the uterine and the ovarian arteries. Therefore a mechanical vicryl Endoloop was placed around the base of the IEP to occlude vascular supply. The next step was the subserosal infiltration of the base of the IEP using a pudendal needle with 60 mL of 20 IU of Pitressin diluted in 200 mL of NaCl 0.9% (modified Dillon’s technique) instead of the original dilution in 100 mL described by Dillon in the 1960s. After the blanching tissue effect was achieved, a cornuostomy was performed with the Harmonic ACE® + 7 Endo Shears (Ethicon®) and the IEP was safely excised and removed carefully via a 10-mm endoscopic bag for retrieval of tissue (Bert) minimising trophoblastic spread. The cornua was closed in two layers using a continuous Stratafix™ Polydioxanne PDO (Ethicon®) biderirectional suture with good haemostatic effect.

Finally, an ipsilateral salpingectomy was performed to reduce risk of recurrence on the same side, since all patients had normal contralateral tube and ovary. PerClot®—a polysaccharide haemostatic system (CryoLife®)—was applied to the sutured surface for haemostasis as well as Hyalobarrier® anti-adhesion gel. The average estimated intraoperative blood loss was less than 500 mL. Average operative time was 105 minutes. Average hospital stay was 18 hours. All patients were discharged home on simple oral analgesia (paracetamol and ibuprofen) and a 2-week follow-up with quantitative serum β-human chorionic gonadotrophin titre was negative in all cases.

BP029

A multidisciplinary approach to investigation and management of recurrent miscarriage in a combined clinic. A 3-year retrospective review

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A combined gynaecology and haematology Recurrent Miscarriage Clinic was set up in our hospital in 2013. This clinic was initiated because while recurrent miscarriage is historically managed under gynaecology, it has become apparent that haematological disorders play an important role. A multidisciplinary approach provides a more efficient and effective service to deliver a ‘one-stop’ clinic. This study aims to review all patients seen in the combined clinic to evaluate the service and to assess if it had any significant impact on outcome, i.e. number of live births after 24 completed weeks of gestation.

A retrospective review of all patients seen in the combined recurrent miscarriage clinic from July 2013 to July 2016 was performed. Data were collected from patient medical notes and electronic records and were analysed categorically to assess the impact of treatment versus conservative management on live births. We also considered the impact of age and other demographics on overall outcome.

A total of 131 patients were seen in clinic over 3 years. The mean age was 32.9 years. There were 68 patients aged under 35 years, 32 of these had live births. There were 63 patients aged 35 years and above. In this group the number of live births was 18 compared with 45 who did not have a live birth (P = 0.03). In the whole cohort, only 34 patients were found to have an underlying problem. Sixty-three patients were treated in the form of progesterone, clexane, aspirin, thyroxine, or a combination. Of these, there were 23 live births in the treatment group compared with 27 in the group that were managed conservatively (P = 0.71). Forty patients that were given treatment were aged 35 years and over compared with 23 patients under the age of 35 years (P = 0.001).

Overall, we demonstrated that increasing age is associated with poorer outcome. In this study we did not demonstrate that intervention made a statistically significant difference to number of live births. However, we treated significantly more patients aged 35 years and over, which may be the reason that treatment did not affect outcome in our whole cohort of patients. Therefore in future it may be worth evaluating whether offering treatment to patients under the age of 35 years would result in more live births. Despite no statistically significant impact on overall outcome, we feel that a one-stop clinic streamlines investigations for these couples, reduces number of visits and offers additional psychological support so the continuation of this service is worthwhile.

BP030

Ectopic pregnancy is associated with increased vaginal bacterial diversity and reduced Lactobacillus species dominance

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Introduction Ectopic pregnancy (EP) remains the leading early pregnancy-related cause of maternal mortality. Pathogenic bacterial species are implicated in the pathophysiology of EP. We aimed to compare vaginal bacterial community composition in early pregnancy in women with EP and those with viable intrauterine pregnancy (VIUP).

Methods Vaginal swabs were collected at 4–7 weeks of gestation from women presenting to an Early Pregnancy Unit. EP status was confirmed at 12 weeks of gestation (n = 19). Samples from VIUPs were used as controls (n = 22). Bacteria composition was examined using MiSeq (Illumina) based sequencing of bacterial
BP031
A review of outpatient medical management of miscarriage at a UK district general hospital
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Introduction Approximately 20% of pregnancies are affected by miscarriage. Early pregnancy loss accounts for 50 000 admissions annually in the UK. Its frequency and associated psychosocial morbidity can incur considerable expenditure. The management of miscarriage has changed over the past two decades, with a move towards outpatient management. The National Institute of Health and Care Excellence states that vaginal misoprostol can be used for outpatient management of miscarriage. Although clinicians should support patient choice, the decision for outpatient management carries advantages for both the patient and healthcare provider. The purpose of this audit was to assess the success of outpatient medical management, and to explore if ultrasound findings had any correlation with success.

Method
The audit included patients diagnosed with miscarriage who opted for medical management using misoprostol as an outpatient, at Medway Maritime Hospital. Data were collected retrospectively from patients’ notes and ultrasound database. This was conducted in two stages (June 2013 to February 2014 and June 2015 to February 2016). The primary outcome measure was absence of retained products of conception on subsequent scan up to 21 days after misoprostol administration. The initial ultrasound findings were compared to the outcome.

Result The first cycle identified 68 cases. For women with missed miscarriage, the average gestational sac diameter ranged from 4.5 to 37.7 mm, and crown–rump length (CRL) from 2 to 18.1 mm. For women with incomplete miscarriage, products of conception (POC) ranged from 10 to 30 mm. Of those with missed miscarriage, 79% were successfully treated with first dose, 6% required a second dose, and 15% required subsequent surgical management. Of the women requiring further management, 79% had an intact gestational sac >12 mm, and 57% a gestational sac >15 mm. All of the women with incomplete miscarriage were successfully managed with single dose. Of the 133 patients in the second cycle, 90% had a missed miscarriage and 10% incomplete. The average gestational sac diameter ranged from 5.8 to 54.3 mm and the CRL was 1.4–44.2 mm. For women with incomplete miscarriage POCs ranged from 10.7 to 45 mm. Of missed miscarriages, 69% were successfully treated with the first dose, 8% required second dose and 23% required subsequent surgical management. In all, 69% incomplete miscarriages were successfully treated with first dose.

Conclusion Misoprostol has a high success rate for outpatient medical management of miscarriage. In the first cycle success rate appeared to be reduced with larger sacs but in the second cycle no such correlation was found. We propose that these findings should be borne in mind when counselling patients. A larger study is required to come to a formal conclusion regarding correlation with ultrasound.

BP032
Medical management of scar pregnancy with potassium chloride and methotrexate and outcome from the Middle East perspective
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Introduction We aim to review the outcome of medical management of women with caesarean scar pregnancy over 1-year period at Tawam hospital.

Methods A retrospective review of all cases diagnosed with caesarean scar pregnancy between November 2015 and October 2016. Cases of scar pregnancy were identified from scan department and FMU records.

Results Ten cases of caesarean scar pregnancy were identified. All were diagnosed by ultrasound scan in the first trimester and confirmed by FMU consultant, the main finding was a heterogeneous mass at the site of the scar. The median gestational age at diagnosis was 6.4 weeks. Nine out of the ten cases were managed by injecting KCl into the sac in theatre followed by methotrexate. Five of these had methotrexate into the sac at the same time as KCl and four had systemic methotrexate with no significant difference between the two groups outcome. One woman had a hysterectomy for ruptured uterus while awaiting medical management. The median duration for β-human chorionic gonadotrophin to return to <5 mIU/mL was 12 weeks but full ultrasound finding resolution took much longer and some cases are still being followed-up.

Conclusion There is no agreed protocol available for management of scar pregnancy. Medical management using both KCl and methotrexate in haemodynamically stable patients appears to be successful. We are currently devising a protocol based on our
Association between vaginal microbiome dysbiosis and miscarriage

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Introduction
While aneuploidy is a known cause of miscarriage, evidence supports an infectious aetiology in some cases. We aimed to assess vaginal microbiota composition in the first trimester of pregnancies including women subsequently experiencing miscarriage or viable pregnancy.

Methods
Pregnant women recruited from the early pregnancy unit were serially scanned between 6 and 14 weeks of gestation. At each visit vaginal swabs were collected and bacterial DNA was extracted. Bacterial composition was assessed using MiSeq-based sequencing of the 16S rRNA gene (V1–V2 hypervariable region). Sequence reads were processed using the Mothur pipeline and analysed using Statistical Analysis of Metagenomic Profiles software.

Results
A total of 155 microbiome samples were analysed from women with first trimester miscarriage (n = 61) or viable term pregnancies (n = 73). Hierarchical clustering of genus level data permitted classification of samples into Lactobacillus-dominant (>80% total sequence reads), intermediate (32–80%) or atypical (<32%). Atypical communities were overrepresented in miscarriage samples compared with controls (47.6% versus 25.6%; P = 0.0034). This was maintained after correction for bleeding (P = 0.0201). Relative abundances of numerous genera associated with bacterial vaginosis were increased in miscarriage samples including Prevotella (P = 0.044), Megasphaera (P = 0.015) and Peptococcus (P = 0.028). Subanalysis of samples collected before miscarriage (n = 16) indicated a higher proportion of dysbiosis in samples subsequently miscarrying compared to viable controls (16.2% versus 31.2%), but this did not reach significance.

Conclusion
Reduced vaginal Lactobacillus levels and increased alpha diversity are associated with miscarriage. Future work will assess if increased vaginal dysbiosis before miscarriage is reflective of a causal infectious aetiology.

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