spectrophotometry. An MTT assay was employed as a measure and marker of cellular viability and proliferation. These tests were performed after seven days of incubation. The alkaline phosphatase:MTT ratio aims to reflect whether any increases in alkaline phosphatase were due to an increase in cell mass or whether this was due to the formation of more terminally differentiated osteoblasts. Cells were also incubated with the drugs for fifteen days. The Alizarin Red assay was performed as measure of calcium fixation and bone matrix mineralization.

Results: Alkaline phosphatase activity was not statistically different between cells treated with EPP, oestrogen or raloxifene (p value: 0.501). A statistically significant difference between drugs was noted in the cell viability assay (MTT) (p value: 0.002). The highest cell viability was noted in the cells treated with oestradiol. Cells treated with the extract of *padina pavonica* were only slightly inferior to raloxifene in terms of osteoblast differentiation as supported by the second highest average estimated marginal means of the alkaline phosphatase to MTT ratio. The different drugs did not show any statistically significant difference in the bone matrix mineralization assay (p value: 0.548).

Conclusion: Our data supports previous studies, which show a potential role for the extract of *padina pavonica* in the management of post-menopausal osteoporosis.

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OP1.021
Uterine fibroid embolisation: initial experience in our local population

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Introduction: Fibroids are the most common benign uterine tumours. Symptomatic fibroids, which are the case in an estimated 50%, can cause excessive menstrual bleeding, varying degrees of pain and, if large enough, significant pressure symptoms. They may even contribute to infertility by hampering implantation. Traditional operative treatments for symptomatic fibroids - hysterectomy and myomectomy - involve considerable morbidity. Treatment of symptomatic fibroids by trans-catheter embolisation of the uterine arteries, first performed in 1995, has since gained acceptance as a safe and effective alternative treatment for fibroids.

It has been a year and a half since the introduction of the uterine fibroid embolisation (UFE) service at Mater Dei Hospital (MDH).

Methods: In our presentation we will delineate the pre-embolisation imaging and clinical work-up of fibroids (including indications and contra-indications), the embolisation technique employed at our institution, and the post-procedure outcomes. MRI is the diagnostic tool of choice for a pre-embolisation work-up. It determines patient eligibility and also helps to assess potential risks that could be encountered during the procedure. It is also helpful in monitoring post-procedure outcome and for diagnosing any complications.

Results: A technically successful embolisation was done in all 20 patients. The results (fibroid shrinkage and symptomatic relief) of all the UFEs performed thus far will be presented. Volume reduction and infarction rate of dominant fibroid were assessed by comparing the baseline and follow up MRIs. Outcome based on fibroid size, multiplicity, location, MR signal characteristics will also be presented.

Conclusion: Symptomatic fibroids are a major local public health problem. Since its introduction at MDH, the UFE service has yielded excellent results - its promises to be an important minimally-invasive, safe and cost-effective alternative treatment of fibroids. For definitive results of its role in our local population, studies with larger sample sizes and longer-term follow-up will be carried out.

OP1.022
Identifying genetic factors for osteoporosis in Malta: a family-based study

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Introduction: Osteoporosis is a complex metabolic bone disease having a strong genetic background and high heritability rate. An extended Maltese family having multiple members affected with primary osteoporosis (T-score: <-2.5 or Z-score: <-2.0) at the spine or hip was recruited, with the aim of identifying known and/or novel genes and gene variants contributing to osteoporosis pathogenesis.

Methods: A 2-generation family consisting of 15 relatives with ages ranging from 28 to 74 years was recruited. Biochemical analysis excluded any comorbidities affecting bone health and none of the relatives had *osteogenesis imperfecta*. Whole genome sequencing was performed on 12 relatives and a number of filtering schemes together with *in silico* modelling were applied to narrow down the list of potentially causal variants.

Results: Five missense variants segregating in a dominant inheritance pattern were shortlisted, all of which had an alternative allele frequency of ≤1% in the 1000Genome project. The gene variants identified were ADAMTS20 rs138035327, BMP1 rs368615556, SELP rs754086574, TGF-b2 rs773943154 and TRIM45 rs146244405. Replication of the ADAMTS20 rs138035327 variant in a case-control collection of 1045 Maltese postmenopausal women was performed to determine association with bone mineral density, fragility fracture risk and biochemical parameters, including serum calcium and alkaline phosphatase. Heterozygosity was associated with a 2-fold increased risk of low serum calcium levels (odds ratio: 2.3 (95% confidence interval 1.1-5.0), p=0.03).

Conclusion: ADAMTS20 encodes a protease enzyme that cleaves aggrecan, required for cartilage and bone formation. Thus, functional follow-up is required to determine how the ADAMTS20 variant could be affecting calcium and bone homeostasis.

OP1.023

The role of interventional radiology in the treatment of chronic pelvic pain in women

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Introduction: Chronic pelvic pain is a common presenting symptom – it is defined as pain of more than 6 months duration and severe enough to cause functional disability. Chronic pelvic pain with associated ovarian vein varicosities is termed pelvic congestion syndrome (PCS) and is an important but under-diagnosed condition. Simply put, PCS is the female equivalent to a testicular varicocele, for which endovascular embolisation has long been the established treatment at our institution. This presentation will provide a platform for PCS and ovarian vein embolisation (OVE), which is a novel service being offered at Mater Dei Hospital.

Methods: Non-invasive imaging (ultrasound, CT and magnetic resonance venography) plays a central role in establishing the diagnosis, excluding alternative causes of pelvic pain and providing a road-map for OVE. Our presentation will describe the early radiographic and clinical results of OVE in 3 local women with a radio-clinical diagnosis of PCS. The technique of percutaneous trans-catheter ovarian vein embolotherapy – performed as selective catheterization of the ovarian veins followed by contrast venography and embolisation – as well as procedure outcomes and potential peri-procedural complications, will be explained.

Results: The procedure was technically successful in all our patients. There were no complications resulting from the procedure. All our patients reported a significant and prompt improvement in their pain perception levels.

Conclusion: To date, our experience of OVE mirrors that of the literature, in that OVE is a safe, cost-effective and feasible option for the treatment of PCS. The procedure is performed on an out-patient basis and is well-tolerated by patients. Our presentation aims to raise awareness of PCS among clinicians and reviews the pathogenesis, imaging assessment and minimally invasive treatment options that are now available.

OP1.024

Are IVF pregnancies high risk pregnancies after 28 weeks?

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Introduction: A study done to determine whether the complication rate in IVF pregnancies is different from that in the background control population.

Methods: A number of specific complications were looked at. All pregnancies from a major NHS hospital were collected over a 2 year period. Successful IVF pregnancies were followed up after 28 weeks gestation and compared to a matched cohort of pregnant controls. A number of maternal complications including diabetes, hypertension, pre-eclampsia, antepartum haemorrhage and multiple pregnancy, were looked at. Foetal outcome with regards to weight at birth and anomalies were also noted. Complications that could have complicated the pregnancy, such as placental abruption, placenta *previa* and intrauterine death were also assessed.

Results: Given the high risk nature of the IVF population, age, weight, reproductive pathologies and other factors, it is often assumed that the pregnancies tend to be high risk. Our results show a trend that suggest that this may be so and that previous conclusions from other studies are corroborated.

Conclusion: The possibility of high risk pregnancy should be part of the counselling that patients are offered prior to undertaking IVF treatment. Being aware of these potential complications one can employ early interventional measures can be undertaken early in the pregnancy period so that their effects on the outcome is minimised.

OP1.025

Measurement of biomarkers for PE in pregnant women: PlGF, sFLT, ADMA and HSP70 mono-methyl lysine

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Introduction: Pre-eclampsia (PE) is a pregnancy-specific disorder and is a leading cause of maternal, perinatal and neonatal morbidity and mortality worldwide. Screening pregnant women with the use of biomarkers for PE could enable pre-symptomatic diagnosis, reducing unnecessary suffering and associated healthcare costs. In this study, six biomarkers which could predict the development of PE or assist in its detection have been investigated.

Methods: Serum samples collected from normotensive and pre-eclamptic pregnant women were used to measure the levels of the potential biomarkers: placental growth factor (PlGF), total and mono-methyl lysine soluble Feline McDonough Sarcoma (fms)-like tyrosine kinase-1 (sFlt-1), asymmetric dimethyl-arginine (ADMA), and total and mono-methyl lysine heat shock protein (HSP) 70, with the use of enzyme-linked immunosorbent assays (ELISAs). The same assays were also performed on cord blood samples collected from newborn babies.

Results: All biomarkers showed gestational variation between trimesters in both the normotensive and pre-eclamptic pregnant women, as well as when comparing trimesters between the two maternal groups. The protein assay results matched the literature, while new data was generated for the methylation assays since no literature is available for comparison. In the case of newborn samples, the results obtained could not be compared to the literature due to the small number of samples and missing demographic data.

Conclusion: The levels of these biomarkers in the maternal sera, both alone but more so in combination, could determine the presence and severity of PE, allowing for preventive measures with the aim of reducing the number of premature births or other PE-associated complications.