MO170 SYSTEMATIC REVIEW OF PATIENTS WITH CHRONIC KIDNEY DISEASE UNDERGOING FERTILITY TREATMENT

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BACKGROUND AND AIMS: The prevalence of chronic kidney disease (CKD) in women of reproductive age continues to rise and reduced fertility is recognized even with mild disease. A greater proportion of women with CKD are seeking assisted reproductive technology (ART) treatment; however, our understanding of treatment success and adverse outcomes is limited. Our aim was to perform a systematic review to describe pregnancy and kidney outcomes and complications of pregnancies in women with CKD following ART.
METHOD: The systematic review was performed with reference to the Cochrane Handbook for Systematic Reviews of Interventions and reported with reference to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The following databases were searched from 1946 to May 2021: (1) Cochrane Central Register of Controlled Trials (CENTRAL), (2) Cumulative Index to Nursing and Allied Health Literature (CINAHL), (3) Embase and (4) MEDLINE. Relevant review articles were also searched for additional studies.
RESULTS: The database search identified 3520 records, of which 35 publications were suitable for analysis. A total of 95 fertility treatment cycles were analysed in 74 women with CKD who had ART. The median age of women with CKD at the time of pregnancy was 32.0 years (IQR 29.0, 34.0 years).
The majority of women had *in vitro* fertilisation (IVF) or intracytoplasmic sperm injection (ICSI) (56/74; 75.7%). One woman had an autotransplant of cryopreserved ovarian tissue which led to a spontaneous pregnancy, one woman had a medicated frozen embryo transfer cycle, one woman used donor eggs and five women used gestational surrogates.
Of the 95 cycles, 11 women (15%) did not have a clinical pregnancy; there were 66 clinical pregnancies from 63 women (69%). There were 81 live births in total, with 21 multifetal live births (26%). There was 1 ectopic pregnancy, 13 miscarriages and 2 still births.
Seven cycles in seven women were complicated by ovarian hyperstimulation syndrome (OHSS) (7%) which were all associated with AKI. Full recovery of kidney function occurred in six women; one woman had progression of her CKD. Hypertensive disorders of pregnancy including pre-eclampsia complicated 27 pregnancies (41%). The most common mode of delivery was caesarean section (42/74, 57%). Preterm delivery (<37 weeks' gestation) occurred in 25 (34%) births. Low birth weight (<2500 g) was present in 46 (79%) of live births and 6 (20%) of birthweights were under the 10th centile. Twelve (15%) neonates required admission to a neonatal intensive care unit (NICU). A total of 7/12 children had normal development at up to 10 years of follow-up. When comparing women with CKD requiring ART to those with natural conception, rates of preterm delivery and caesarean section were similar; however, rates of pre-eclampsia ($P = .001$) and multifetal deliveries were significantly higher ($P < .001$) in the ART cohort.
CONCLUSION: To our knowledge, this systematic review represents the most comprehensive assessment of fertility outcomes in patients with CKD who have assisted conception. Limitations include reporting bias due to a high reported live birth rate. Patient selection for fertility treatment and identification of risk factors remains crucial in order to maximize patient safety, screen for adverse events and optimise fertility outcomes.

MO171 CHRONIC INFLAMMATION MIGHT PROTECT HAEMODIALYSIS PATIENTS FROM SEVERE COVID-19

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BACKGROUND AND AIMS: Patients on haemodialysis (HD) are expected to have excess mortality in coronavirus disease 2019 (COVID-19). This was challenged by a recent study reporting HD patients to have comparable mortality and decreased ICU admissions when hospitalized with COVID-19. It was speculated that an altered immune system due to chronic inflammation might protect HD patients from severe COVID-19. Therefore, we designed a study to describe the peripheral blood immune phenotype in HD patients and respective controls with COVID-19.
METHOD: Sixty-four patients (31 HD, 33 non-HD) with PCR-confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and 16 control patients (10 HD, 6 non-HD) were prospectively included. According to symptoms, COVID-19 patients were categorized as asymptomatic/mild and moderate/severe COVID-19 phenotypes. Cytokine profiling and immune phenotyping were performed.
RESULTS: Th1 and Th17 plasma cytokine levels were highly increased in HD patients without SARS-CoV-2 infection and were not significantly regulated during COVID-19. In non-HD COVID-19 patients, these cytokines increased significantly with disease severity. While all patients with moderate/severe COVID-19 showed hallmarks of COVID-19 such as decreased $CD3^+$, $CD4^+$ and $CD8^+$ and $CD4^+CD25^{hi}FoxP3^+$ regulatory T cells, significantly increased $CD38^+CD8^+$ effector memory and $CD38^+CD8^+$ TEMRA T cells were detected in HD compared to non-HD patients with moderate/severe COVID-19. Furthermore, $CD161^+CD8^+$ T cells decreased significantly in non-HD COVID-19 patients dependent on disease severity, but not in HD patients. Dynamics of B cells and subtypes were comparable in HD and non-HD COVID-19 patients. Significantly fewer moderate/severe COVID-19 HD patients needed ICU treatment [1/13 (7.7%) HD, 12/24 (50%) non-HD], whereas no difference in mortality was observed [4/31 (12.9%) HD, 6/33 non-HD (18.2%)].
CONCLUSION: HD patients might be protected from severe COVID-19 due to their chronic inflammatory state with increased $CD38^+CD8^+$ effector memory and TEMRA T cells as well as $CD161^+CD8^+$ T cells.

MO172 CORRELATION OF SERUM ADIPOCYTE FATTY ACID BINDING PROTEIN LEVEL AND PERIPHERAL ARTERIAL DISEASE IN CHRONIC KIDNEY PATIENTS

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BACKGROUND AND AIMS: Adipocyte fatty acid-binding protein (A-FABP) is expressed in adipocytes, dendritic cells and macrophages and it was thought to be involved in insulin resistance, chronic inflammation and atherosclerotic processes. Peripheral arterial disease (PAD) is associated with all-cause mortality, cardiovascular events and a key pathological process is atherosclerosis. The present study aimed to determine the relationship between serum A-FABP level and PAD in patients with non-dialysis chronic kidney disease (CKD).
METHOD: Fasting blood samples and baseline characteristics were obtained from 260 non-dialysis CKD patients (CKD stage 1–5). Ankle-brachial index (ABI) values were measured using an automated oscillometric device. Patients with ABIs of <0.9 were categorized into the low ABI group. Serum A-FABP levels were measured using a commercial enzyme immunoassay assay.
RESULTS: In the study cohort, 32 of the 260 non-dialysis CKD patients (12.3%) had low ABIs. The rates of diabetes mellitus ($P = .037$), smoking ($P = .030$), older age ($P = .002$) as well as the serum levels of A-FABP ($P = .003$) were higher in the low ABI group compared with the normal ABI group. The multivariable logistic regression analysis revealed that serum levels of A-FABP [odds ratio (OR): 1.223, 95% confidence interval (CI): 1.068–1.401, $P = .004$], older age (OR: 1.064, 95% CI: 1.026–1.104, $P = .001$) and smoking (OR: 4.438, 95% CI: 1.493–13.198, $P = .007$) were the independently associated with PAD in patients with CKD. By receiver operating characteristic (ROC) curve analysis, the area under the receiver operating characteristic curve of A-FABP level was 0.662 (95% CI: 0.601–0.719, $P = .0004$) for predicting PAD in non-dialysis CKD patients.
CONCLUSION: In this study, serum A-FABP levels were associated with PAD in patients with non-dialysis CKD.

MO173 CLINICAL PROFILE OF PLASMA CELL DYSCRASIAS AND THEIR RENAL OUTCOMES

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BACKGROUND AND AIMS: The involvement of kidney in plasma cell dyscrasias is widespread, often referred to as myeloma kidney. At the time of presentation, nearly 50% of patients have renal involvement which is associated with higher mortality [1, 2]. Multiple myeloma is more common in African Americans, with male predilection and median age about 65–70 years [3]. Two major causes of renal insufficiency are light chain cast nephropathy and hyperkalcaemia [4]. Flow cytometry plays an important role in diagnosis of plasma cell dyscrasias. Myeloma cells infrequently express CD19 and variable CD45 in contrast to normal plasma cells. Approximately 70% of myeloma cells will express CD56, which is typically negative in