P-102 Oral antioxidant therapy improves sperm quality in patients with abnormally high levels of apoptotic spermatozoa
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Study question: To determine whether two months of oral antioxidant treatment could improve sperm quality in neat sperm samples with abnormally high levels of apoptosis.

Summary answer: Oral antioxidant therapy during two months significantly reduces apoptosis levels in sperm samples improving clinical results.

What is known already: Traditional semen analysis is not always sufficient for adequate male infertility diagnosis. In consequence, recent studies have focused on the comprehensive evaluation of sperm features. Apoptosis is a process that induces cellular, morphological and biochemical alterations leading the cell to suicide without an inflammatory response. Despite apoptosis occurs continuously in the testicle, it is known that high apoptosis levels have a negative impact on embryo development and pregnancy outcomes. Several strategies such as magnetic activated cell sorting (MACS) have been proposed to reduce apoptotic sperm levels, however the antioxidant therapy seems to be an easier solution to this problem.

Study design, size, duration: Uncentric and retrospective study including 156 sperm samples from patients undergoing egg donation treatment at our center between January 2014 and September 2015. The influence of oral antioxidants such as vitamins, diclofenac and Seidifery in human sperm samples with 2 days of sexual abstinence, after two months of therapy is explored in this study.

Participants/materials, setting, methods: Apoptosis was assessed by flow cytometry using Annexin-V-RTC/PI assay in the first visit and two months later at the start of treatment.

When apoptosis level was in normal range (≤20%), patients did not take any medication (control group n = 34). When altered on the first visit, they initiated the intake of vitamins (group 1, n = 23), vitamins and diclofenac (group 2, n = 73), Seidifery (group 3, n = 8) or vitamins, diclofenac and Seidifery (group 4, n = 17). Apoptosis levels of the groups were statistically compared.

Main results and the role of chance:

When assessing the effect of the oral antioxidant treatment on the study groups, a significant reduction of apoptosis levels were found in all groups (group 1: 20.54% to 14.82%, p = 0.0023; group 2: 21.42% to 13.43%, p = 0.0001; group 3: 25.27 to 8.64%, p = 0.012; group 4: 28.42% to 11.52%, p = 0.002). Results show that the administration of antioxidant treatment to patients producing sperm samples with altered levels of apoptosis improves sperm quality significantly, reducing the number of apoptotic spermatozoa in the ejaculate.

Moreover, in the control group we could find a significant increase in the apoptosis level from 7.82% in the first visit to 13.91% (p = 0.006). Although the level of apoptosis from control group patients remains in the normal range, the absence of medication leads to an increase in the number of apoptotic spermatozoa present in the ejaculate.

Limitations, reasons for caution: The retrospective and uncentric nature of the study, together with the limited number of samples may be reasons for caution. Further studies should be performed to evaluate the effects of oral antioxidant treatment in other sperm quality parameters.

Wider implications of the findings: This study demonstrates that the evaluation and treatment of sperm samples with pathologic levels of apoptotic spermatozoa prior to the completion of the fertility treatment may improve, embryo development and clinical outcomes.

Trial registration number: Non applicable.

P-103 Sperm count upon switch from valproic acid to other antiepileptic drugs of male subfertile patients
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Study question: The aim of the study was to determine whether switching from valproic acid to other antiepileptic drugs improves the sperm counts of male subfertile patients.

Summary answer: There is significant improvement of the sperm count and sperm parameters after switching from valproic acid to other antiepileptic drugs.

What is known already: Apart from epilepsy per se and its role on hypothalamic-pituitary-gonadal axis function, antiepileptic drugs (AEDs) may also have an important impact on hormonal regulation, affecting peripheral endocrine glands, hormones’ protein binding and metabolism. Valproic acid (VPA) is a widely used AED, whose adverse reactions in fertility are not limited to women. Effects of VPA on male reproductive health occur early during treatment, with increase in serum testosterone, free androgen index, androstenedione and dehydroepiandrosterone sulfate.

Study design, size, duration: Observational study of adult subfertile epilepsy male patients, long term treated with VPA, recruited in a period of three years.

Participants/materials, setting, methods: Seventeen subfertile male patients, followed up at the University Department of Neurology were referred for fertility management at the Assisted Reproduction Unit, Department of Obstetrics and Gynecology. A sperm count was conducted while they were treated with VPA and six months after switching to another AED. Pregnancies, after switching, were also reported.

Main results and the role of chance: A significant improvement of the sperm count was observed in eleven patients (65%) and spontaneous pregnancies were reported in three of the patients.

Limitations, reasons for caution: This is an observational study without blind controls in patients with epilepsy; effective seizures control upon switch is a potential confounding factor of the sperm count improvement.

Wider implications of the findings: Epilepsy is a common disorder affecting people with high prevalence in the young age. Epilepsy and AEDs may affect family planning and cause infertility problems. Fertility specialists treating subfertile patients with epilepsy have to be familiarized with issues emerging from certain AEDs and refer their patients for antiepileptic treatment reconsideration.

Trial registration number: None.

P-104 Sperm DNA Fragmentation and Semen Parameters in a cohort of Brazilian Infertility Patients
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Study question: Is there a correlation between sperm DNA fragmentation (SDF) in a cohort of Brazilian infertility patients and their lifestyle and semen parameters, such as sperm morphology, concentration, and motility?

Summary answer: Patients showed high levels of SDF regarding aging, sexual abstinence and lower sperm parameters. No association between alcohol or cigarette consumption and SDF was found.

What is known already: Sperm DNA integrity has emerged as an important parameter of sperm quality in the prognosis of infertility and in the assisted reproductive outcomes. There are controversial studies related to an adverse effect of sperm DNA damage on fertility. These studies emphasize that the discrepancy is due to the various methods used for evaluating the cut-off value of SDF, due to different detection methods, studied population, and type of assisted reproductive procedure.

Study design, size, duration: Two hundred and one patients undergoing a private andrology clinic for fertility evaluation were subjected to routine sperm analysis in a cross-sectional study. Personal habits (alcohol consumption and cigarette smoking) were also verified. Patients were stratified into groups regarding age, sexual abstinence, semen parameters, lifestyle habits, and sperm DNA fragmentation.

Participants/materials, setting, methods: Samples were assessed according WHO 2010. SDF was assessed by sperm chromatin dispersion (SCD) test.