Title: Malondialdehyde and diene conjugate levels in sperm and seminal plasma of infertile and normozoospermic men
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**Objective:** Lipid peroxidation plays a major role in etiology of male infertility. Oxidative stress in the cellular environment results in the formation of highly reactive and unstable lipid hydroperoxides. Decomposition of the unstable peroxides derived from polyunsaturated fatty acids results in the formation of malondialdehyde (MDA) - the end product of lipid peroxidation and diene conjugates (DC) the initial products of lipid peroxidation. The aim of this study was to determine the lipid peroxidation levels expressed by MDA and DC in spermatozoa and seminal plasma of patients with different characteristics of semen and normozoospermic males in partners of couples enrolled in ART clinic.

**Design:** Prospective study

**Materials and Methods:** A total of 153 men were grouped according to their semen characteristics: group 1: normozoospermic (n = 77) which served as the control; group 2: asthenozoospermic (n = 38); group 3: teratozoospermic (n = 18) and group 4: teratoasthenozoospermic (n = 20). Semen analysis was done according to the WHO guidelines. MDA was measured in spermatozoa and seminal plasma colorimetrically by the thiobarbituric acid method and the color read at 532 nm. Diene conjugates were detected in lipid extracts of sperm or seminal plasma and read at 232-234 nm. The unit for MDA and DC were μM/mL for seminal plasma and μ M/10^6 for spermatozoa.

**Results:** MDA and DC levels in spermatozoa and seminal plasma of normozoospermic and infertile males are shown in Table. MDA levels correlated significantly with diene conjugates in both seminal plasma and sperm from normozoospermic (r = 0.87 and 0.79); asthenozoospermic (r = 0.93 and 0.83); teratozoospermic (r = 0.83 and 0.92) and teratoasthenozoospermic group (r = 0.96 and 0.96) (p<0.001).

**Conclusions:** Malonaldehyde and diene conjugates are elevated in spermatozoa and seminal plasma of astheno-, terato- and teratoasthenozoospermic men. Since these markers are related to fertility, they can serve as a potential biochemical index of semen quality.

**Support:** None