

ABSTRACT

BLOOD LEAD LEVELS AND SEMEN QUALITY IN MEN EXPOSED TO MOTOR VEHICLE GAS EMISSION

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OBJECTIVE: To evaluate the blood lead levels and semen quality (seminal volume, sperm count, sperm motility, sperm normal morphology) in men occupationally exposed to motor vehicle gas emission.

METHODS: In a cross sectional study of 30 men as parking workers (exposed workers, 8 hours/day, 8.1 ± 3.1 years exposure) and 30 men non-occupationally exposed as control living in the same area. Semen was analyzed following World Health Organization (WHO) procedure and blood lead levels was measured using atomic absorption spectrophotometry.

RESULTS: Mean of semen quality were significantly lower in exposed workers versus controls. Mean levels of seminal volume, sperm count, sperm motility, sperm normal morphology were, respectively: 2.43 ± 0.68 ml, 27.63 ± 10.16 ($\times 10^6$ /ml), 44.17 ± 4.26 %, 39.87 ± 5.32 % (exposed workers), 3.32 ± 1.01 ml, 38.99 ± 14.46 ($\times 10^6$ /ml), 60.33 ± 7.15 %, 50.53 ± 8.41 % (controls). Mean blood lead levels were significantly higher in exposed workers, i.e. 1.8 times higher than in controls (168.22 ± 28.68 ug/L versus 92.01 ± 23.25 ug/L). Blood lead levels were inversely correlated with semen quality

CONCLUSIONS: The present study shows that the blood lead levels: 1) have adversely affected semen quality, 2) are inversely correlated with semen quality, and 3) are below the WHO-recommended health based limit for occupational lead exposure in male subjects.

Key words : gas emission, lead, semen quality.