

## OP 10

### Lead and Cadmium levels in seminal plasma of men investigated for infertility: Is it due to occupational and environmental exposures?

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**Objective:** This study was done to determine the association between environmental and occupational exposure to Lead (Pb) and Cadmium (Cd) and their levels in seminal plasma.

**Method:** Data on exposures was collected from 300 males investigated for infertility using an interviewer administered questionnaire from July 2010 to October 2011. Positive exposure was defined as environmental or occupational exposure to one or more toxicants such as pesticides, paints, solvents, metals and chemicals. Lead and Cadmium were estimated in seminal plasma by Graphite Furnace Atomic absorption spectrophotometry after digestion with Nitric acid. The correlation between Pb and Cd level and distance from the environmentally polluted area was done by Spearman's correlation. The means of Lead(Pb) and Cadmium(Cd) levels between exposed and non exposed groups were compared using T-test.

**Results:** The means (SD) of age, duration of the infertility and BMI of the subjects were 34.83(5.34) years, 45.70 (35.09) months, 24.42 (4.28) Kg/m<sup>2</sup> respectively. Of the men investigated, 54.6% were exposed to toxicants through environmental or occupational sources. While 26.6% lived in areas with possible environmental toxicity 37.3% were exposed to toxicants through occupational sources. Lead and Cadmium were detected in 38.3% and 23% of men respectively. Means of Lead (17.69±28.0 ug/dl) vs. (13.46±23.75 ug/dl) and Cadmium (1.24±3.38 ug/dl) vs. (1.11±3.02 ug/dl) levels were higher in the exposed when compared to non exposed men. A significant positive correlation(r=0.26) was observed between distance from the environmentally polluted areas and Cd positive subjects (P=0.03).

**Conclusion:** Exposure to toxicants through occupational and environmental sources is associated with lead and cadmium levels in seminal plasma.