

Practice characteristics of dental assistants in dental offices versus urinary mercury level

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Abstract:

Amalgam is the most frequently used material for dental restorations releasing mercury vapor as ions and as particulate matter. This work aimed at studying practice characteristics of dental assistants in office and their urinary mercury level as a measurement of occupational exposure to mercury. Informed consent was obtained from 40 dental assistants working at different dental offices from both Tanta Faculty of Dentistry, EI-Menshawey General Hospital and Saeed Health Center. The average age of subjects was 40 years with an average 18 years in dental practice and 30 hours of work per week. The number of amalgam restorations per subject was less than four. The study subjects delivered a total of four morning urine samples; the first urine sample followed by one day, one week and one month samples after the first one. The mean urinary mercury concentration among dental assistants with occupational exposure to mercury was 13.88±13.86 mgm/l compared to 6.02±1.72 mgm/l for non-exposed assistants with statistically significant difference ($p<0.001$). There was a positive correlation between the mean urinary mercury level and number of amalgam restorations placed per week ($r = 0.893$, $p<0.001$).