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Cadmium Exposure and Renal Effect in Soldering Iron Workers

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I read with interest the published article in Biological Trace Element Research by Mortada et al. [1]. The authors specified that cadmium (Cd) exposure, monitored in samples of blood and urine, was significantly associated with urinary N-acetyl-β-D-glucosaminidase (NAG) and beta 2-microglobulin (BMG) in 49 soldering iron workers, aged from 22 to 38 years old. I have some concerns on their study outcome.

The authors enrolled soldering iron workers, and the level of cadmium exposure was obvious by monitoring blood and urine cadmium in their Table 5. I previously reported that renal effect by occupational Cd exposure with geometric mean value of urinary cadmium around 1 μg/g creatinine, and a significant association with urinary Cd was observed in urinary NAG [2]. As the significant association between urinary CD and urinary BMG was not consistent, I recommended using urinary NAG as an early indicator of renal effect. Thereafter, I observed the usefulness of urinary NAG for monitoring early renal effect in low-dose Cd pigment workers [3]. Kim et al. reported that residents with urinary Cd levels higher than 5 μg/g creatinine showed significant associations with urinary NAG and urinary BMG [4], and urinary BMG would be a good indicator of Cd exposure as urinary Cd increases.

Finally, adjustment of smoking habit on the association between Cd exposure and renal effect is needed [5]. If the number of subjects is limited, appropriate adjustment by multivariate analysis cannot be conducted. As the absolute values of correlation coefficient are not so high, further study is required to confirm their study. In addition, indices of Cd and markers of renal damage are not normal distribution, appropriate transformation is needed. I appreciate their study presenting the appropriate procedure of Cd measurement, and I pointed out some basic queries on their study.

Compliance with Ethical Standards

Conflict of Interest The author declares that he has no conflict of interest.

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