

GENDER DIFFERENCE OF MORTALITY IN RESIDENTS OF A CADMIUM POLLUTED AREA IN JAPAN

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We have conducted a 15-year follow-up study of subjects (1424 men and 1754 women) aged ≥ 50 years living in the cadmium (Cd) polluted area in Japan, who participated in a health impact survey carried out in 1981-2. Their survival status for 15 years was investigated, and mortality risk ratios between men and women were analyzed in the groups with different urinary beta2-microglobulin (b2-MG) concentration levels after adjustment for age using Cox's Proportional Hazard Model. When the subjects were divided into 5 groups according to urinary b2-MG concentration (<100 , 100-300, 300-1000, 1000-10000, ≥ 10000 ug/gCr), mortality risk ratios of men as compared with women, in each group were 2.60, 2.19, 1.44, 1.38, 1.62, respectively, showing lower mortality risks in the three groups with urinary b2-MG ≥ 300 ug/gCr than those in the two groups with b2-MG < 300 . Cancer mortality risk of men was 2.59 in the group with < 300 ug/gCr of urinary b2-MG, but 1.75 in the group with ≥ 300 ug/gCr. Also, mortality risk ratio from heart failure of men as compared with women, was 2.37 in the group with < 300 ug/gCr, but 0.89 in the group with ≥ 300 ug/gCr, with no more significant higher mortality in men. These results suggested that the renal tubular dysfunction induced by Cd increases mortality risks in women more than in men, and that Cd toxicity in women may be greater than that in men.