PREDIAGNOSTIC ANTHROPOMETRY AND INCIDENT UROTHELIAL CANCER IN THE MALMÖ DIET AND CANCER STUDY: LINK BETWEEN OBESITY AND LOW-RISK BUT NOT HIGH-RISK DISEASE

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Aim: While epidemiological studies have shown that obesity is associated with an increased risk of several forms of cancer, the links with urothelial cancer (UC) are inconsistent. Here, we examined associations of prediagnostic anthropometry with risk of UC, overall and in relation to clinicopathological characteristics, in a prospective population-based cohort study.

Methods: Among 28098 participants the Malmö Diet and Cancer Study, 355 incident UC cases had been registered by Dec 31 2010; 335 (94.4%) of which were located in the bladder. Seven anthropometric factors; height, weight, bodyfat %, hip circumference, waist circumference, BMI and waist-hip ratio (WHR) were categorized into quartiles (Q). Hazard ratios (HR) of UC, overall as well as of low-risk (Ta, grade 1 and 2) and high-risk (Ta grade3, CIS and T1-4) tumours, were calculated using multivariable Cox regression models, adjusted for sex, age, smoking and alcohol intake.

Results: An elevated BMI, but no other anthropometric measurement, was associated with an increased overall UC risk in the entire cohort (HR for Q1(ref)-Q4: 1.0, 0.98, 1.09, 1.32, p_trend= 0.050), and in men (HR for Q1-4: 1.0, 0.87, 0.96 and 1.42, p_trend= 0.037). There were no associations between obesity and UC risk in women. Obesity was not associated with high-risk tumours in the entire cohort, but several anthropometric factors were significantly associated with low-risk tumours; i.e. weight (HR for Q1-4: 1.0, 1.45, 2.24, 2.97, p_trend= 0.023), waist (HR for Q1-4: 1.0, 1.16, 2.18, 1.99, p_trend = 0.043), hip (HR for Q1-4: 1.0, 1.76, 1.05, 2.13, p_trend = 0.028), and BMI (HR for Q1-4: 1.0, 0.86, 1.30, 1.70, p_trend = 0.009). Sex-stratified analyses revealed significant associations between obesity and UC risk in women. Obesity had no impact on survival in UC cases.

Conclusions: These findings provide support for a link between obesity and low-risk but not high-risk urothelial cancer and, hence, underline the importance of taking tumour characteristics into consideration in epidemiological studies.

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