

Association between anthropometric characteristics and bladder cancer risk: a systematic review and meta-analysis of longitudinal cohort studies

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July 13, 2020

Abstract

Background/ Aims Anthropometric characteristics, namely overweight/obesity, height and waist circumference have been associated with various cancer types. The aim of this systematic review and meta-analysis is to evaluate the potential associations between anthropometric characteristics and bladder cancer risk, synthesizing longitudinal cohort studies. **Methods** Literature search across MEDLINE, EMBASE, Scopus, Google Scholar and Cochrane Central was performed up to December 31, 2019 and data abstraction was performed independently by two authors. Random-effects (DerSimonian-Laird) models were used to estimate pooled relative risks (RR) and 95% confidence intervals (95%CI); subgroup analyses were performed geographical region, mean age, publication year, length of follow-up, sample size, method of BMI estimation and adjustment for smoking. **Results** A total of 27 studies were included (88,593 bladder cancer cases in a total cohort of 49,647,098 subjects). Increased bladder cancer risk was noted in overweight men (pooled RR=1.12, 95%CI: 1.04-1.21) but not in overweight women. Both obese men (pooled RR=1.14, 95%CI: 1.06-1.22) and women (pooled RR=1.19, 95%CI: 1.02-1.38) showed increased risk. Interestingly, height increase per 5 cm did not seem to affect risk of bladder cancer in men (pooled RR=1.03, 95%CI: 0.99- 1.06) and women (pooled RR=1.02, 95%CI: 0.97-1.06). Larger waist circumference was associated with bladder cancer risk in men (pooled RR=1.18, 95%CI: 1.09-1.26) but not women. **Conclusion** In conclusion, bladder cancer risk seems to be related with obesity overall and central obesity in men. In contrast to other cancer types, height does not seem to affect risk, but more studies are needed to extract safe conclusions.

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Conflicts of Interest: The authors declare that they have no potential conflict of interest

Funding: No funding was received

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