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**p45. BMI and gallbladder cancer: a meta-analysis of observational studies**

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Introduction: Gallbladder cancer is a highly malignant tumour with a poor 5-year survival rate. In 1997, the WCRF concluded that a higher body mass may play a role – either direct or indirect via gallstones – in gallbladder cancer. To assess and quantify the association between BMI and gallbladder cancer, this meta-analysis was performed.

Methods: A systematic literature search in 10 electronic databases was conducted (4,255 hits). Relevant publications were selected using a three-step process based on title/keywords (617), abstracts (137), and full papers (44). Data extraction of study characteristics and results was performed, followed by independent verification. After data-conversion to a log(RR) per unit BMI (kg/m<sup>2</sup>), meta-analysis was performed (STATA 8). Secondly, a meta-analysis for the highest vs. the lowest BMI category was carried out.

Results: Four cohort studies and 8 case-control studies reported data on BMI and gallbladder cancer. From 6 independent estimates of 3 cohort studies, the pooled RR was 1.22 per 5 kg/m<sup>2</sup> (95%CI: 1.05-1.34). The same studies could be included in the meta-analysis for highest vs. lowest exposure category (RR =1.60 [95% CI: 1.21-2.12]). The pooled RR for 7 case-control studies (8 estimates) was 1.10 per 5 kg/m<sup>2</sup> (95% CI: 0.77-1.54). Meta-analysis for highest vs. lowest BMI category revealed a pooled RR of 1.58 (95%CI: 1.16-2.13). Results from 1 case-control and 1 cohort study that could not be included in analysis, were in line with the meta-analysis.

Conclusion: Meta-analysis, both per unit and for the highest vs. lowest category, on BMI and gallbladder cancer showed positive pooled associations for cohort and case-control studies. Although heterogeneity between studies was substantial, the estimates from cohort and case-control studies were similar. Therefore, like mentioned in the former WCRF report, BMI appears to be positively associated with gallbladder cancer.