Resting heart rate as a predictor of cancer mortality: A systematic review and meta-analysis

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Abstract

This work was aimed to synthetize the evidence available about the relationship between resting heart rate (RHR) and the risk of cancer mortality. A computerized search in the Medline, EMBASE, Web of Science, and Cochrane Library databases from their inception to 24 September 2020 was performed. We performed three meta-analyses: (1) cancer mortality comparing the “less than 60 bpm” and “more than 60 bpm” categories; (2) cancer mortality comparing “less than 60 bpm”, “60 to 80 bpm”, and “more than 80 bpm” categories; and (3) analysis for 10–12 and 20 bpm increase in RHR and risk of cancer mortality. Twenty-two studies were included in the qualitative review, and twelve of them met the inclusion criteria for the meta-analysis. Our results showed a positive association between RHR and the risk of cancer mortality. This association was shown in a meta-analysis comparing studies reporting mean RHR values below and above 60 bpm, when comparing three RHR categories using less than 60 bpm as the reference category and, finally, in dose response analyses estimating the effect of an increase of 10–12 bpm in RHR, both in men and in women. In conclusion, a low RHR is a potential marker of low risk of cancer mortality. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

Author keywords

Cancer mortality; Meta-analysis; Resting heart rate; Risk of cancer