Reliability of studies published as SR/MA on nutrition in cancer prevention - a systematic survey

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Background:
In several fields of medicine, the quality of studies published as systematic reviews/meta-analyses (SR/MAs) is low. Similar problems may exist for SR/MA on nutrition in cancer prevention. We aimed to assess overall quality and risk of bias (RoB) of studies published as SR/MA on nutritional interventions in cancer prevention with two instruments: AMSTAR 2 ('a measurement tool to assess systematic review 2') and ROBIS ('Risk of Bias in Systematic Reviews') respectively.
Methods:
Following a systematic search in 3 databases we included studies identified as SR/MA published between 2010 and 2018 assessing any nutritional interventions in cancer prevention in the general population or among people with cancer risk (Protocol in PROSPERO CRD42019121116). All the steps of study selection and data extraction were done by two independent reviewers with conflicts solved by discussion or by the third reviewer.
Results:
We focused on a subsample of 101 SR/MA randomly selected from 737 included SR/MA. Included SR/MA on average searched 2 databases with Medline in 98% and included cohort studies (93%). They focused on specific food (36%), specific nutrients (27%) or beverages (24%, mostly tea and coffee). The assessment using AMSTAR 2 tool indicated that 93% of SR/MA had no pre-specified methodology, in 77% - research questions and inclusion criteria did not include the components of PICO, RoB assessment of primary studies was not used or did not contain all elements (87%) and RoB was not accounted for in the interpretation of the results (75%). Overall, the quality of 97% of studies was assessed as critically low. In the ROBIS tool for 97% of included studies, the overall high risk of bias was detected. The most important methodological flaws in ROBIS were similar to identified in AMSTAR tool.
Conclusions:
Poor quality of SR/MA due to flawed methodology may lead to many concerns and mislead public media and consumers.
Key messages:
- Poor quality of SR/MA due to flawed methodology may lead to many concerns and mislead public media and consumers.
- The studies published as SR/MAs addressing nutrition for cancer prevention have major flaws, which limit the reliability of their conclusions.