Effect of organized cervical cancer screening on mortality in Europe: a systematic review

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Background: Organized cervical cancer (CC) screening hasn't been implemented in many European countries despite clear recommendations from the European council. The objective of this study was to provide an overview of the impact of organized screening on CC mortality across Europe and to explore differences in effect between European regions.

Methods: Six databases were searched including Embase, Medline and Web of Science from inception to April 2016. Predefined inclusion and exclusion criteria were used by two independent reviewers to identify all eligible studies which showed the effect of screening on CC mortality. Only original studies in English with a minimum of five years of follow-up that were either randomized controlled trials (RCTs) or observational studies were included. Validated tools were used to assess the quality of the findings such as risk of bias of the included studies.

Results: A total of nine observational studies were included, seven cohort studies and two case-control studies. No RCTs were found. Moreover, no studies from the eastern and southern region of Europe were included. The cohort studies did not all report group sizes consistently, but contained more than 1,200,000 women while the case-control studies added up to 306 cases (109 exposed) and 1434 controls (1033 exposed). The CC mortality reduction for women invited to organized screening vs. non-invited varied from 17% to 79% in 5 studies. For participants vs. non-participants, this reduction ranged from 41% to 91% across 6 studies. The observed mortality reductions were similar between western (45% – 91%) and northern (41% - 87%) Europe.

Conclusion: This systematic review provides evidence that CC screening reduces CC mortality in all European regions where CC screening was implemented and monitored.

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