



# AB001. SOH22ABS001. Prophylactic aspirin intake and breast cancer risk— a systematic review and meta-analysis of observational cohort studies

Martyna Bakierzynska, Carolyn Cullinane,  
Mark Corrigan

University College Cork, Cork Breast Research Centre, Cork, Ireland

**Background:** Breast cancer (BC) is the most common cancer amongst women. The chemo-preventative effects of aspirin on BC have been demonstrated in several longitudinal studies however previous meta-analysis has shown inconsistent results. This study aimed to assess the relationship between aspirin use and BC risk, and to determine if there is a dose-response relationship between aspirin and BC risk.

**Methods:** Studies incorporating BC risk with aspirin use published within the last twenty years were included. The study report is based on the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) and Meta-Analysis of Observational Studies in Epidemiology.

**Results:** Twenty-eight cohort studies that reported BC incidence during a follow up of 4.4 to 32 years were included. Compared to non-users, aspirin users had a reduced risk of BC (HR =0.91, CI: 0.81–0.97, P=0.002). There was no obvious association between BC risk reduction and aspirin dose (HR =0.94, CI: 0.85–1.04) or duration (HR =0.86, CI: 0.71–1.03). Frequency, however, was associated with a reduced risk of BC (HR =0.90, CI: 0.82–0.98). A risk reduction was observed in estrogen receptor (ER) positive tumours (HR =0.90, CI: 0.86–0.96,

P=0.0004) while no relationship was observed with ER negative tumours (HR =0.94, CI: 0.85–1.05).

**Conclusions:** This meta-analysis found an association between aspirin intake and BC risk reduction. A more favourable outcome was noted with ingestion of greater than 6 tablets of aspirin per week. Aspirin had a significant risk reduction in patients with ER positive tumours compared to ER negative BC.

**Keywords:** Aspirin; breast cancer (BC); chemoprevention; meta-analysis; systematic review

## Acknowledgments

*Funding:* None.

## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

*Open Access Statement:* This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

doi: 10.21037/map-22-ab001

**Cite this abstract as:** Bakierzynska M, Cullinane C, Corrigan M. AB001. SOH22ABS001. Prophylactic aspirin intake and breast cancer risk—a systematic review and meta-analysis of observational cohort studies. *Mesentery Peritoneum* 2022;6:AB001.