AB042. SOH23ABS_045. Assessing the role of microRNAs in predicting breast cancer recurrence —a systematic review

Luis Bouz Mkabaah, Matthew Davey, James Lennon, Nicola Miller, Michael Kerin

Department of Surgery, The Lambe Institute for Translational Research, University of Galway, Galway, Ireland

Background: Breast cancer recurrence is associated with poor survival. Identifying patients likely to develop recurrence remains a challenge to the oncologist. Therefore, the identification of novel biomarkers which are capable of detecting breast cancer recurrence is imperative to improve patient outcomes. Mi(cro)RNA are small, non-coding *Ribonucleic acid* (RNA) molecules which impact genetic expression and are recognised as novel biomarkers in malignancy. Aim: to perform a systematic review evaluating the role of miRNAs in breast cancer recurrence.
Methods: A formal systematic search was performed of the PubMed, SCOPUS, Web of Science, and COCHRANE databases according to the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) checklist.
Results: A total of 19 studies which included 2,287 patients were included. These studies identified 44 miRNAs whose expression predicted breast cancer recurrence. Results from 9 studies assessed tumour miRNAs (47.4%), 8 studies included circulatory miRNAs (42.1%) and 2 studies assessed both tumour and circulatory miRNAs (10.5%). Increased expression of 26 miRNAs and decreased expression of 13 miRNAs were exclusively identified in patients with recurrence (compared to those free of recurrence). Furthermore, 5 miRNAs (miR-17-5p, miR-93-5p, miR-130a-3p, miR-155 and miR-375) had conflicting data in the literature regarding their expression, with studies indicating
Conclusions: This systematic review outlined miRNA expression patterns capable of predicting breast cancer recurrence. These findings may be used in future translational research studies to identify patients with breast cancer recurrence to improve oncological and survival outcomes for our prospective patients.
Keywords: Breast cancer; micro ribonucleic acids; recurrence; personalised medicine; surgical oncology

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.

doi: 10.21037/map-23-ab042
Cite this abstract as: Mkabaah LB, Davey M, Lennon J, Miller N, Kerin M. Assessing the role of microRNAs in predicting breast cancer recurrence—a systematic review. Mesentery Peritoneum 2023;7:AB042.