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miRNA 200 Family Expression is a Strong Predictor for Recurrence Following Liver Resection for Breast Cancer Liver Metastases

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Abstract
Although only a small percent of breast cancer patients are diagnosed in metastatic stages, a significantly higher percent will develop disseminated recurrences at a certain point of their evolution, this event being responsible for a high number of cancer relate deaths. In recent years a particular attention was paid for identifying the factors which might be responsible for the development of metastatic disease. The current study included 27 patients submitted to surgery for breast cancer liver metastases in "Dan Setlacec" Center of Gastrointestinal Diseases and Liver Transplantation Fundeni Clinical Institute, Bucharest Romania. In all cases miRNA expression was studied in both tumoral and non-tumoral tissues. miRNA species which were proved to be supra-expressed in the tumoral areas included mainly the miRNA 200 family (miR-200c and miR-141). These results demonstrate that alterations in miRNA-200 family play a key role in development of breast cancer liver metastatic process. In the meantime miRNA family seems to be a strong predictor for recurrence following liver resection for breast cancer liver metastases. Therefore, these molecules might become an useful signature in identifying high risk breast cancer patients; moreover this analysis seem to provide a better selection of patients who could benefit most from hepatic resection for breast cancer liver metastases. In this way, a significant improvement of overall survival after liver resection is expected. In the meantime, miRNA analysis could also indicate which patients are less probably to benefit from surgery and could straighten them to other personalized therapeutic strategies.

Key words: breast cancer liver metastases, miRNA 200 family, liver resection