

Hormone receptor expression in pregnancy- associated breast cancer: a systematic review of the literature

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Context: Pregnancy-associated breast cancer (PABC) constitutes 7% of all breast cancers (BCs) and is defined as BC occurring anytime during gestation, lactation or within one year after delivery. The exact pathogenesis and factors that probably contribute to PABC biologic behavior, are not clearly defined yet. As hormonal factors associated with pregnancy and lactation may play a complex role in such cases, hormone receptor (HR) status has been assessed in several studies with contradictory results. Objective: To evaluate the expression of estrogen receptors (ER) and progesterone receptors (PR) in PABC. Methods-materials: PRISMA guidelines for systematic reviews and meta-analyses were followed by the authors. Pubmed and Scopus databases were searched systematically for studies that sought to evaluate the HR status, including expression of ER and PR, of patients with PABC. 22 articles were eligible for inclusion in the present systematic review. For comparison between means, the student t-test was used where appropriate for normally distributed variables. For comparison between proportions the Fisher exact test was used. All calculations were based on crude data. Results: We identified 20 matched case-control and 2 prospective studies, that compared PABC cases with non-pregnant BC controls. There were 7 studies evaluating HR expression (without any further specification), including 894 cases and 2500 controls. Out of 894 cases there were 386 positive for HR expression (43.1%). Out of the 2400 controls there were 1500 positive (62.5%) (p value<0.0001). Fifteen studies including 1799 cases and 6342 controls, assessed ER status. Out of 1788 cases there were 538 positive (30%). Out of the 6342 controls there were 2453 positive (38,6%) (p value <0.0001). Fourteen studies including 1766 cases and 6297 controls evaluated PR expression. Out of 1766 cases there were 448 positive (25%). Out of 6297 controls there were 2246 positive (35%) (p value<0.0001). Conclusion: Overall, the expression of steroid hormone receptors was significantly decreased in PABC cases as compared to the controls. Further investigation is needed, regarding the impact of this finding in survival data and disease free survival for patients with PABC.

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