

## P339. Possible benefits of metformin use in patients with breast cancer

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**Objective:** The first-line antidiabetic drug metformin has been reported to reduce breast cancer incidence and inhibit the growth and invasiveness of breast cancer cells. The aim of this study is to review publications concerning possible benefits of using metformin in patients with breast cancer.

**Methods:** Pubmed and Medline were searched for relevant articles published from July, 2009 to November, 2017 using the keywords “breast cancer”, “metformin”.

**Results:** 29 eligible studies were included in this review. Studies consisting of patients using metformin before or/and after breast cancer diagnosis were considered. Both diabetic and non-diabetic patients who had used metformin were at lower risk of breast cancer than those who had not. Women with newly diagnosed breast cancer who had started metformin had significantly better response to chemotherapy and survival rates than those who had not. Metformin exhibits its anticancer effect both in direct (inhibiting proliferation and inducing apoptosis of breast cancer cells) and indirect (insulin-dependent) ways. In few studies which were not involved in this work, metformin use was not related to a reduced incidence of breast cancer but it was associated with improved overall survival.

**Conclusions:** This study suggests that metformin may have a protective effect on breast cancer risk. Moreover, it might be used as an adjuvant agent in breast cancer chemotherapy for better outcomes both in diabetic and non-diabetic patients. However, more clinical trials evaluating metformin use in breast cancer management and prevention are needed.

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