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TITLE

TYPE II DIABETES AND GYNECOLOGICAL CANCER-WHAT IS THE LINK?

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ABSTRACT

Type II diabetes is associated with an increased risk of several types of cancer and a significantly higher risk of cancer related death compared with the population without diabetes. Women with type II diabetes have an increased risk for endometrial cancer, breast cancer (mainly postmenopausal) and ovarian cancer. The strongest evidence is for endometrial cancer, where the risk is at least doubled compared with non-diabetic women. Mortality rate from gynecological cancer in women with diabetes is two times higher compared with women without diabetes. Type II diabetes and gynecological cancer share common risk factors (eg. obesity, diet); biological links between the two diseases are incompletely understood. Possible mechanisms involved in carcinogenesis associated with diabetes are discussed: insulin resistance, hyperinsulinemia, insulin growth factors, hyperglycemia with altered glucose metabolism in the cancer cell, chronic inflammation, changes in bioavailable ovarian hormones, effects of diabetes therapy. The role of metformin as a potential adjunctive therapy in women with gynecological cancer is discussed, based on the evidence that metformin is associated with benefits on cancer therapy outcomes and survival in women with endometrial, breast or ovarian cancer. Managing women with type II diabetes and gynecological cancer is complex, some anti-cancer therapies can alter glucose control (eg. glucocorticoids during chemotherapy), certain chemotherapeutic agents are nephro-, neuro- and/or cardiotoxic and can worsen already established diabetic microvascular or macrovascular complications. Due to the strong evidence for a positive association between diabetes and gynecological cancer, screening all women with type II diabetes for endometrial, breast and ovarian cancer is highly recommended.

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