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Anti-diabetic drugs & cancer risk challenge

Increasing evidences of cancer development in diabetic patients were reported. Many studies demonstrated a correlation between some anti-diabetic drugs and a higher risk of cancer incidence. The highest incidence was shown in liver cancer and pancreatic cancer then kidney, endometrial, colorectal, non-Hodgkin lymphoma, bladder, and breast cancers. Meta-analysis of cohort studies calculating the Relative Risk (RR) of all-site or site-specific cancers in diabetic patients were accomplished notifying a different RR according to sex. Mechanisms suggested by authors were related to diabetes itself whether being complicated or a non-adherence to anti-diabetic medications. Obesity-related hyperinsulinemia acts as a critical link to the increased cancer risk through mitogen pathway activation and the enhanced cellular growth and survival. On the other hand, the influence of anti-diabetic medications itself on cancer has recently gained attention. Studies reported evidences that using metformin, as an insulin sensitizer, may decrease cancer development, progression, and mortality. However, treatment with insulin secretagogues, insulin analogues, thiazolidinediones, and some incretin based therapies are related to increased incidence of development and mortality related to cancer. Currently there is no sufficient evidence to force withholding of certain antidiabetic drugs use on the basis of cancer concern. So cancer risk assessment is a useful primary prevention tool in selecting a suitable anti-diabetic drug(s). Identification of the individuals at increased genetic or environmental risks of cancer by diabetes physicians should be done. Web-based tools for collecting and predicting individual risks of certain cancers and familial syndromes are easily accessible. Individuals with a high likelihood of having an inherited syndrome should be seriously considered for referral to the cancer genetics professional for further work-up. Special attention should also be paid to potentially modifiable cancer risk factors regarding a healthy lifestyle. Nevertheless, to reduce the cancer risk associated with anti-diabetic medications use, treatment with metformin is recommended throughout the course of the disease as long as it is medically acceptable. Also strong efforts to reduce excess of body weight should be taken. The selection of other anti-diabetic classes as an add-on treatment to metformin is based on cancer risk assessment and review of cohort studies and metanalyses reports on their associated cancer RR.

Biography

Eman I. Anwar is a Lecturer in Clinical Pharmacology at Alexandria faculty of Medicine . completed her Master degree Medical Basic Science in Pharmacology general grade Excellent, 2011 and Doctor degree in Clinical Pharmacology with GPA score: 3.642 , August 2016. She is Pharmacovigilance & drug counseling center advisor at university hospital clinics Since June 2015 and Egyptian Association of Medical Basic Sciences (EAMBS) member since 2009. Her research interest is on Experimental pharmacology in oncology, endocrinology, Pharmacovigilance, Medical education and E-learning.