

# Palliative Care & Clinical Trials and Pharmacovigilance

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## Do we need pharmacovigilance of drugs like Metformin?

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**D**iabetes Mellitus is an overwhelming medical crisis for Pakistan (ranked 6th globally) with an expected 14.5 million patients by 2025. Type 2 Diabetes Mellitus (T2DM) predominates, with around 90%, of all the reported diabetic cases in Pakistan. Metformin (Glucophage) is the go-to, first line drug monotherapy against Type 2 Diabetes Mellitus around the world. A global observation is that in spite of the drug's proper usage, around 35% of T2DM individuals do not succeed to achieve initial optimum glycemic control by metformin monotherapy. In this era of personalized medication, it has been established that genetic factors are responsible for 64% to 94% of variations in an individual for renal clearance of any specific drug, including metformin.

We conducted a study to estimate the contribution of genotypic differences among diabetics for their individual responses to metformin affects. Many SNPs from the genes associated with metformin pharmacokinetics were found associated with these differences. The analysed genes were SLC22A1, SLC22A2, SLC22A3, SLC47A1 and SLC47A2. We

report strong, statistically significant, associations of certain SNPs with ineffectiveness of metformin in non-responding patients.

Assessment of individual responses (or no responses) of patients to their prescribed drugs come under the umbrella of 'Pharmacovigilance' and it is recommended that medical practitioners all over the world, but particularly in Pakistan, may consider genotypic evaluation of their patients before prescribing metformin to all the patients, since a good (35%) patients do not respond to metformin.

### Speaker Biography

E Sumbul Khalid completed her PhD from PMAS- Arid Agriculture University, Rawalpindi, Pakistan. She has been serving in the Department of Biological Sciences, International Islamic University, Islamabad, Pakistan, campus since 2010. She has published more than 20 papers in reputed journals that has been cited more than 40 times. Her research interest includes diagnostics and therapeutics, pharmacogenomics, oncogenic cellular pathways. She is also serving as an editorial board member of reputed journals.

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