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CDA-NABC-cytidine deaminase activity a predictive marker of toxicity/efficacy in nucleosidic analogs-based chemotherapy

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Nucleoside analogues such as gemcitabine and cytarabine are widely prescribed in pediatric and adult oncology. However, large variability in clinical outcome and efficacy has been observed. Therefore, new biomarkers with predictive power to assess inter-individuals differences in clinical outcome are urgently warranted. Cytidine Deaminase (CDA) is a liver enzyme that plays a crucial role in the metabolism of nucleoside analogues, coded by a gene displaying several genetic and epigenetic polymorphisms. Consequently, CDA activity is present various phenotypes, ranging from deficient (Poor Metabolizer patients, PM), to ultra-rapid deaminator patients (Ultra-Metabolizer patients, UM), with subsequent impact on drug pharmacokinetics and pharmacodynamics eventually. Several studies showed that CDA status was well correlated with clinical outcomes in patients undergoing nucleosidic analogs-based chemotherapy. Therefore, a low CDA activity is associated with more toxicity but a higher efficacy, while a high activity will lead to a lower efficacy but less toxicity. CDA phenotypic screening and prior stratification of patients' status should be considered as relevant strategy to personalize dosing and to improve efficacy/toxicity ratio.

Biography

Adel Gouri has completed his PharmD from Badji Mokhtar University and Postdoctoral studies in Clinical Biochemistry from Badji Mokhtar University School of Medicine. He is a Lecturer and Research Scientist in Ibn Rochd-Annaba Hospital University. He has published more than 25 papers in reputed journals and has been serving as Editor In Chief and Editorial Board Member of repute.

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