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## Polymorphism of Human Organic Cationic Transporter1 (C480G) in Egyptian Chronic Myeloid Leukemia Patients on Imatinib

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**Background:** Human organic cationic transporter1 (hOCT1) is a plasma membrane transporter responsible for the main influx of Imatinib into chronic myeloid leukemia (CML) cells. Single nucleotide polymorphisms (SNPs) in the gene coding for hOCT1 are important factors causing Imatinib resistance. We investigated the frequency of hOCT1 SNP C480G among Egyptian CML patients and its relation to early molecular response as an indicator of treatment outcome.

**Materials and Methods:** Two groups of CML patients were included in this study. Group I consisted of 25 patients responding to Imatinib treatment (Imatinib responsive) and group II consisted of 25 patients resistant to Imatinib (Imatinib resistant). Response criteria were assessed according to the NCCN (National Comprehensive Cancer Network) guidelines 2017. Twenty healthy controls of matched age and sex were also included (group III). For all patients, we studied hOCT1 C480G at initial presentation using Taqman drug metabolism genotyping as well as BCR-ABL percent at diagnosis and after 3 months interval.

**Results:** hOCT1 C480G was present in 32% of studied CML patients. CC (wild) was detected in 68% of group I and 64% of group II. CG (mutant heterozygous) was present in 28% of group I and 36% of group II while GG (mutant homozygous) was detected in only one case in group I. CG was also detected in 15% of control subjects. There was no significant difference between hOCT1 C480G polymorphism and Early Molecular Response ( $\chi^2 = 0.089$ ,  $p = 0.765$ ).

**Conclusions:** hOCT1 C480G polymorphism has no association with Imatinib resistance in Egyptian population. However, further studies on a larger number of patients are still needed to confirm this finding.

### Biography:

Maha Mohamed Adel Elgammal is an Assistant professor of Hematology at medical Research Institute, Alexandria University, Egypt. She is also a consultant of hematology in the Egyptian Health Insurance. Her research focuses on Hemato-oncology. She is a member of Egyptian association of hematology & BM transplantation. She is also a member of Egyptian association of blood diseases & researches.