J Pharm Sci Emerg Drugs 2018, Volume 6
DOI: 10.4172/2380-9477-C1-006

Detection of BCR-ABL gene in Chronic myeloid leukemia patients treated with tyrosine kinase inhibitors drugs by gene expert system

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This study was conducted at the period from September 2016 to February 2017, 100 Iraqi CML patients were divided into two groups, first group of 50 patients were received Imatinib 400-800 mg/day, second group of another 50 patients were received 800 mg/day Nilotinib, WBC were microscopically counted using improved Neubauer ruled hemocytometer counting chamber. BCR-ABL gene RNA transcript and endogenous control (housekeeping gene) RNA transcript were extracted and purified and then reverse transcript to cDNA after that the product was amplified and quantified by qRT-PCR. The results first group patient's distribution according to the gender were 56% and 44% for males and females respectively while the mean age of the patients was 45.82±16.17, the result of WBC counting of this group in regard to disease duration showed that the highest value was observed in newly diagnosed and advanced stage 98.28±89.28, 77.11±2.98 respectively. The WBC count return to normal level after the period of treatment with Imatinib with significant reduction after one year at p≤0.0001. The results of molecular technique and BCR-ABL analysis in newly diagnosed advanced stage and cytogenetics. Failure patients were 10.05±4.7, 3.03±0.94 and 28.4±0.09 respectively with significant decrease after one year of treatment at p≤0.002. On the other hand, the results of the second group of CML patients in relation to the gender were 45% and 55% of males and females respectively, while the mean age group was 36.68±13.51. The results of WBC count according to disease distribution in newly diagnosed and advanced stage were 87.5±8.71 and 43±21.72 respectively. WBC count was return to normal level after one year of treatment with Nilotinib with significant decrease at p≤0.0001. While the molecular technique and BCR-ABL analysis in newly diagnosed, advanced stage and cytogenetic failure group were 7.77±4.1, 16.17±3. 78 and 2.02±0.53 after one year of treatment with Nilotinib with significant decreased at p≤0.0001. We conclude that treatment with Imatinib was found tough in a high extent of patients. Nilotinib is extending specific tyrosine kinase inhibitor possess greater and selectively activity for BCR-ABL.

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