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Frequency of BCR-ABL fusion transcripts in Sudanese patients with chronic myeloid leukemia using real-time reverse transcription-polymerase chain reaction

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Objectives: In Sudan, CML is the most common cancer among males and the second most common cancer among females our study aimed to determine the frequencies of BCR-ABL transcript variants studied in Sudanese patients with chronic myeloid leukemia (CML).

Methods: This is a descriptive cross-sectional study carried out in 112 CML patients who attended at different clinics of Khartoum state, Sudan from February 2007 to December 2010. Transcript analysis was successful in 109 venous blood and bone marrow samples using quantitative real-time-polymerase chain reaction (RT-PCR).

Results: The transcripts analysis of 109 patients showed that 32.1% (35/109) expressed one or both of the P210 BCR/ABL rearrangements (b2a2 and b3a2). Of those 35 (32.1%), 21 patients expressed b2a2, 6 expressed b3a2 and 8 expressed both transcripts b2a2/b3a2. The remaining 74 patients revealed transcripts combination of P190 BCR/ABL and P210 BCR/ABL (e1a2/b2a2/b3a2), of which 19 patients had all the transcripts (e1a2/b2a2/b3a2), 33 revealed 2 transcripts (e1a2/b2a2) and the remaining 22 patients had (e1a2/b3a2).

Conclusion: The frequencies of BCR-ABL rearrangements in the Sudanese population demonstrated distinct profiles in contrast with the frequencies reported in similar studies conducted in other geographical regions. This might be due to the distinct ethnic group involved in this study which has been supported further by reported distinct genetic profiles in Sudanese patients with bladder and breast cancer.

Biography

Abdel Rahim Mahmoud Muddathir has completed his PhD from Alzaiaim Alazhari University and completed his PhD in CMM at Karolinska Institute, Sweden. He had the fellowship of IBMS and he is also Sudan Advisory Board Member of ASCP. He is the Editorial Board Member of *Austin Journal of Cancer and Clinical Research* and he was the Dean of Medical Laboratory Sciences School in Sharq Elniel College.

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