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Evidence of association of interleukin-23 receptor gene polymorphisms with Egyptian rheumatoid arthritis patients

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Background: The identification of additional genetic risk factor is an on-going process that will aid in the understanding of Rheumatoid Arthritis (RA) aetiology. A genome-wide association scan in Crohn's Disease (CD) highlighted the Interleukin-23 Receptor (IL23R) gene as a susceptibility factor. Since the IL-23/IL-17 pathway is known to associate with other autoimmune disease, including rheumatoid arthritis and systemic sclerosis, we hypothesized that IL23R could be a shared susceptibility gene. The rare allele of IL23R single nucleotide polymorphism (SNP) rs11209026 (Arg381Gln) confers strong protection against CD. Our aim was to analyze IL23R SNP (rs11209026, rs2201841, and rs10889677) and to detect its association with RA in Egyptian patients.

Methods: A group of Egyptian patients with RA (n=120) and apparently healthy persons as controls (n=120) was genotyped for rs11209026, rs2201841 and rs10889677 by real time/polymerase chain reaction (real-time/PCR) for the first SNP and restriction fragment length polymorphism/PCR (RFLP/ PCR) in the last two SNPs.

Results: Our data emphasise that the AA genotype of rs11209026 (Arg381Gln) was significantly associated with RA patients compared to the controls (p value=0.001). We did not find any significant association between either rs2201841 or rs10889677 and the development of rheumatoid arthritis (p value=1.000 & 0.562, respectively).

Conclusion: Our results suggest that IL23 receptor AA genotype variant of rs11209026 would contribute to RA aetiology; consequently, it might be a genetic marker for RA. We need to address the sub-group of patients who will benefit from the selective suppression of the IL23 signaling which would represent new perspectives toward a personalized therapy of RA patients by further studies.

Biography

Gehan Hamdy has completed here MBBCh from Kasr El Ani Hospital, Cairo University, Egypt and Postdoctoral studies from same University. She is Assistant Professor of Internal Medicine. She has published more than 10 papers and 3 case reports in reputed journals.

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