

Association between IL17 A polymorphism and clinicopathological parameters in Egyptian Multiple Myeloma patients

MM-191

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Abstract

Multiple myeloma (MM) is one of B-cell lymphoproliferative disorders, in which, the bone marrow (BM) microenvironment plays a key role in pathogenesis. T-helper 17 cells (Th17) present within BM microenvironment and secrete the pro-inflammatory cytokine, interleukin 17 (IL-17). Single nucleotide polymorphisms (SNPs) in IL17A found to be involved in the pathogenesis of many cancers and autoimmune diseases.

Objectives

To investigate the role of IL-17A SNPs in MM pathogenesis, and its impact on clinical features of MM.

Materials

A prospective study conducted on 77 MM patients, (female; 46.8%, male; 53.2%) with mean age 54.6 years. In addition to healthy control of matched age and gender. It was carried out in Oncology Center, Mansoura University.

Methods

We obtained genomic DNA from 77 patients with MM and healthy controls and detected IL17A –197 G/A (rs2275913) genotypes using the polymerase chain reaction-restriction fragment length polymorphism method.

Results

The IL-17A polymorphism was not involved in susceptibility to MM in the Egyptian population, **and** there was no statistical significant association with gender (***p* 0.14**), hypercalcemia (***p* 0.28**), hypoalbuminemia (***p* 0.49**), renal impairment (***p* 0.13**), elevated LDH (***p* 0.62**), osteolytic bone lesions (***p* 0.26**), pathological fracture (***p* 0.96**), plasmacytoma (***p* 0.42**), and ISS stage III (***p* 0.26**). IL-17A polymorphism showed no statistical significant differences in OS (***p* 0.83**) of MM patients, **while**, there was a statistical significant worse OS among patients with thrombocytopenia (***p* 0.006**), renal impairment (***p* 0.047**), and ISS stage III (***p* 0.02**).

Table 1: Clinical characteristics of MM patients according to IL17A genotypes

		AA Genotype	GA & GG Genotype	P
Gender	Male	17(44.7%)	24(61.5%)	0.14
	Female	21(55.3%)	15(38.5%)	
HB level	<10 gm/dl	31(81.6%)	32(82.1%)	0.957
	≥10 gm/dl	7(18.4%)	7(17.9%)	
Sr Creatinine	High Creatinine	18(47.4%)	25(64.1%)	0.13
	Normal value	20(52.6%)	14(35.9%)	
Lytic bone lesions	Yes	26(68.4%)	31(79.5%)	0.268
	No	12(31.6%)	8(20.5%)	
SPEP	M-band	34(89.5%)	32(82.1%)	0.352
	No M-band	4(10.5%)	7(17.9%)	
BJP	Positive	9(24.3%)	8(20.5%)	0.69
	Negative	28(75.7%)	31(79.5%)	
ISS	Stage I	20(52.6%)	13(34.2%)	0.26
	Stage II	6(15.8%)	8(21.1%)	
	Stage III	12(31.6%)	17(44.7%)	
Chemotherapy protocol	Bortezomib containing regimen	12(31.6%)	10(25.6%)	0.564
	Others	26(68.4%)	29(74.4%)	
Overall response	CR & PR	20(52.6%)	23(59%)	0.575
	PD &SD	18(47.4%)	16(41%)	

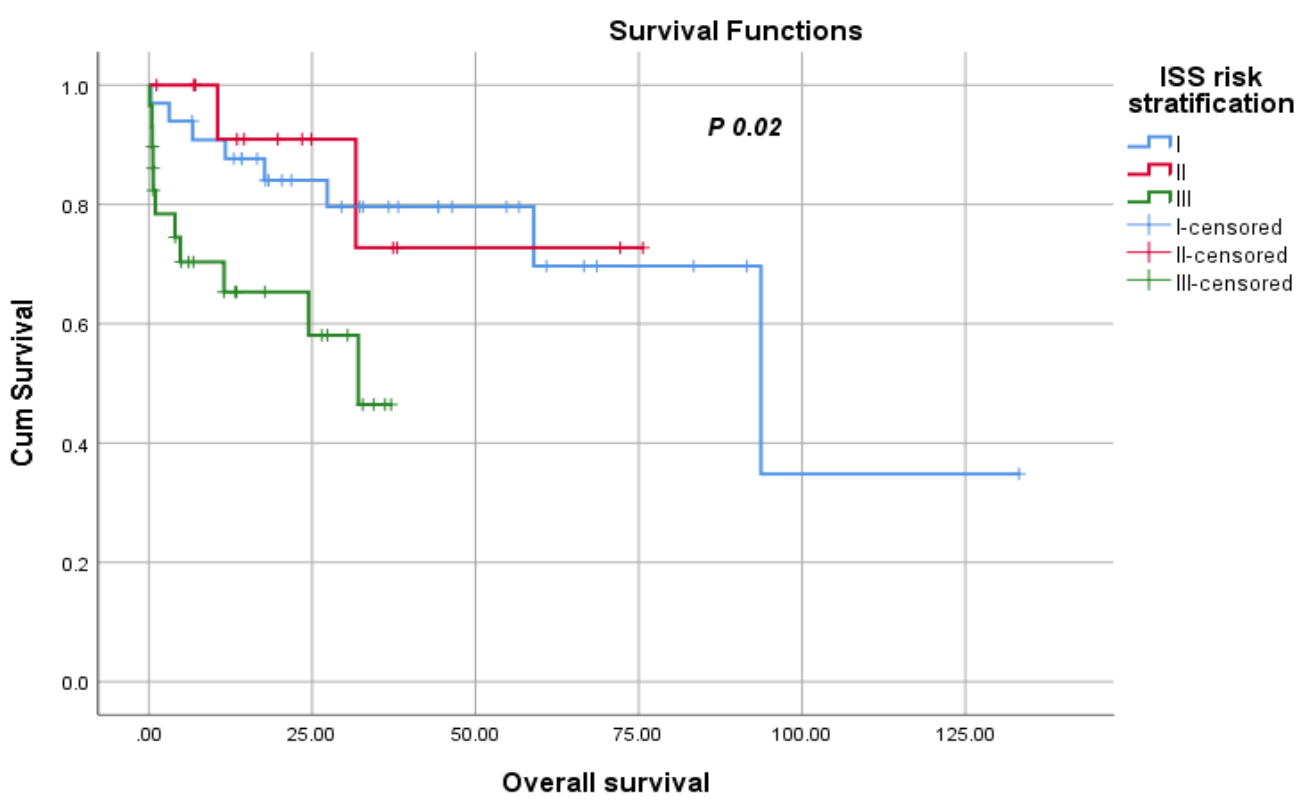


Figure 1: OS of patients with MM according to the ISS

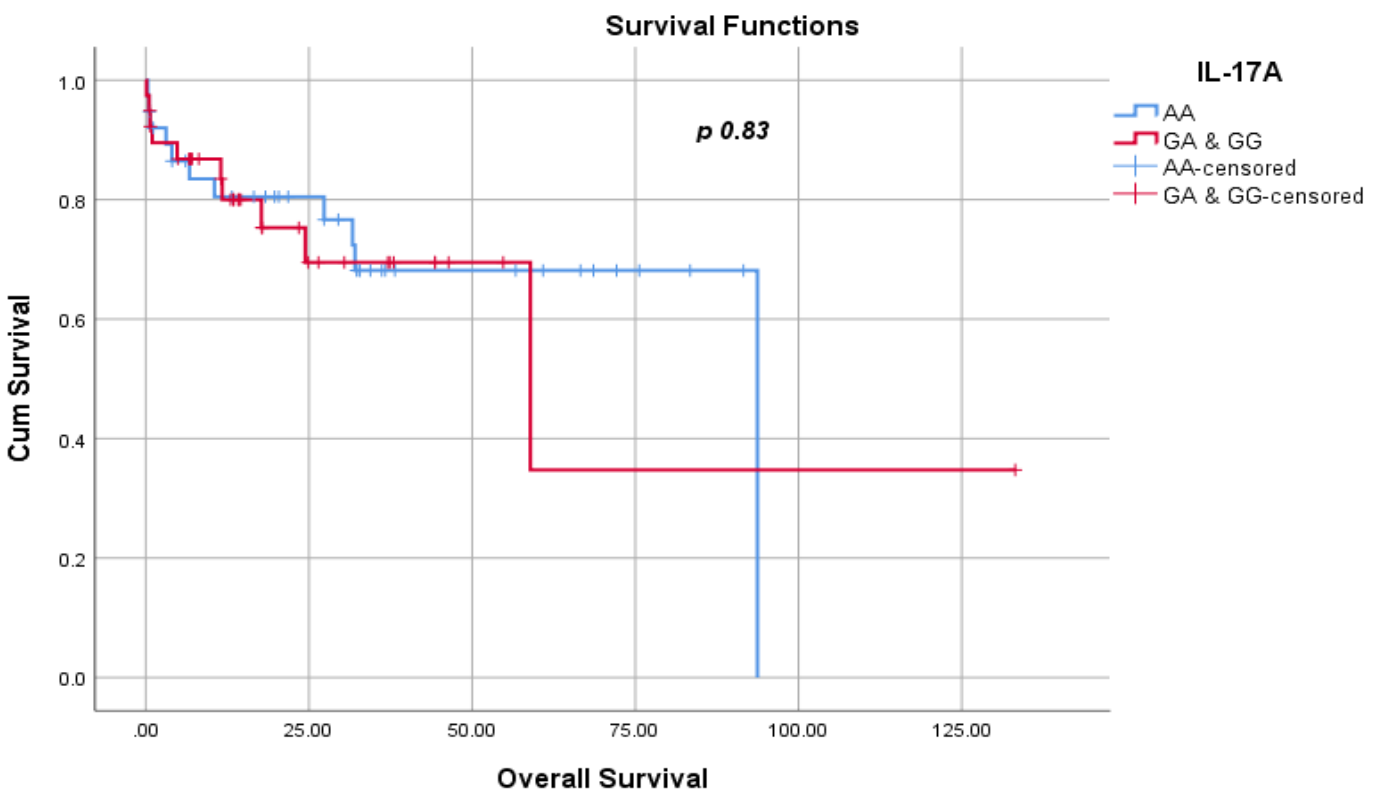


Figure 2: OS of patients with MM according to the IL17A genotype.

Summary

In this study, IL-17A polymorphism was not associated with susceptibility to MM, **and**, did not influence its severity. **In addition**, OS survival in MM patients was not affected by IL-17A polymorphism.

References

Kasamatsu, T., et al (2018). IL17A and IL23R gene polymorphisms affect the clinical features and prognosis of patients with multiple myeloma. *Hematological oncology*, 36(1), 196-201.