

Poster presentation

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Association between IL2RA and juvenile idiopathic arthritis (JIA) disease severity at first presentation to paediatric rheumatology: results from the Childhood Arthritis Prospective Study (CAPS)

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Background

CAPS was designed to study clinical and genetic predictors of JIA outcome. The gene IL2RA has recently emerged as a JIA susceptibility locus. This study investigates the association between SNPs located within the IL2RA region and disease severity at first presentation to rheumatology.

Methods

Demographic and disease features were collected at first presentation to rheumatology. SNPs(rs2104286, rs41295061, rs11594656) were genotyped on a Sequenom MassARRAY[®] platform. Logistic regression, adjusted for ILAR subtype, was used to determine the association between genotype and moderate to severe disability (defined as CHAQ score ≥ 0.75).

Results

185 children with JIA (median age 7.2 years (IQR 3.6, 11.7), 65% female) were included. Median CHAQ score at presentation was 0.75 (IQR 0.13, 1.38). There was a trend towards higher disability with increased number of copies of the rare allele of rs2104286 (Table 1) (OR 8.00 (0.93, 68.79), $p = 0.06$). An association was also seen between increased disability and homozygosity for the rare allele of rs11594656 (OR 3.37 (0.89–12.75), $p = 0.07$). There was no association with rs41295061.

Conclusion

Children homozygous for the rare allele (rs2104286) a SNP associated with JIA susceptibility, showed a trend towards increased disability. Interestingly, a second SNP in the IL2RA region not previously associated with JIA susceptibility also showed a similar trend. Validation of these results in larger cohorts is required.

Table 1:

Gene IL2RA	N(%)	Median CHAQ score(IQR)*	OR CHAQ ≥ 0.75(95% CI), p-value	
			Unadjusted	Adjusted
rs2104286	185			
11	119(64)	0.75(0.13, 1.38)	Ref	Ref
12	58(31)	0.81(0.25, 1.38)	1.06(0.56, 1.99), p = 0.86	1.05(0.54, 2.03), p = 0.88
22	8(4)	0.94(0.81, 1.38)	6.02(0.72, 50.42), p = 0.09	8.00(0.93, 68.79), p = 0.06
rs11594656	185			
11	100(54)	0.88(0.13, 1.44)	Ref	Ref
12	68(37)	0.63(0.13, 1.07)	0.63(0.34, 1.18), p = 0.15	0.64(0.33, 1.21), p = 0.17
22	17(9)	1.38(0.88, 1.88)	3.52(0.95, 13.02), p = 0.06	3.37(0.89, 12.75), p = 0.07

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