

Presence of 'ACKR1/DARC null' polymorphism in Arabs from Jisr az-Zarqa with Benign Ethnic Neutropenia

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We describe the presence of the ACKR1 (rs2814778) polymorphism within a socially closed Arab community in Israel.

To our knowledge this is the **FIRST** documentation of Duffy-null genotype in the Arab-Israeli population.

We observed a strong correlation between low neutrophil counts and the ACKR1 null- genotype.

Within the ACKR1-null genotype (C/C) subgroup, the mean neutrophil count was decreased while 35% of individuals displayed normal neutrophil counts. Interestingly, this is about 3.5-fold more common in our cohort than previously described studies.

A higher awareness of benign ethnic neutropenia within specific populations could prevent such investigations and minimize management setbacks in neutropenic patients.

Characteristics	T/C – heterozygous (N=4)	C/C – homozygous (N=26)	P-value
WBC Count (K/ul)			
Mean (SD)	8.35 (0.83)	5.68 (1.57)	<0.001
Median (IQR)	8.20 (1.5)	5.20 (1.5)	
Range	7.5-9.5	3.6-11.2	
Neutrophil count (K/ul)			
Mean (SD)	3.80 (1.87)	2.20 (0.733)	
Median (IQR)	4.65 (3.00)	2.10 (1.20)	
Range	1.0-4.9	0.9-3.4	
Neutrophilic Count, % (n/N) > 2.5 k/uL	75% (3/4)	34.6% (9/26)	
Relative Neutropenia, % (n/N) between 2.5-1.5 k/uL	0% (0/4)	42.3% (11/26)	<0.01
Neutropenia, % (n/N) < 1.5 k/uL	25% (1/4)	23.1% (6/26)	
Hemoglobin Count (g/dl)			
Mean (SD)	13.65 (2.83)	12.51 (1.88)	
Median (IQR)	12.80 (5.2)	12.40 (2.9)	
Range	11.4-17.6	9.1-17.1	
Platelets Count (K/ul)			
Mean (SD)	244.25 (53.98)	258.46 (49.06)	
Median (IQR)	232 (101)	260 (60)	
Range	195-318	140-362	
Age (years) ***			
Mean (SD)	15.5 (13.9)	28.3 (17.6)	
Median (IQR)	16.0 (25)	27.0 (26)	
Range	2.0-28.0	2.0-60.0	
Gender, % (n/N)			
Female	75% (3/4)	46.15% (12/26)	
Male	25% (1/4)	53.85% (14/26)	

Table 1: Patients characteristics according to ACKR1 genotype SD, standard deviation; IQR, interquartile range; WBC, white blood cell Statistically significant values are in bold

