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Heritability and familiarity of type 2 diabetes in Yazd population, Iran

Ensieh Shahvazian¹, Mohammad Bagher Mahmoudi², Saba Gharibi¹ and Ehsan Farashahi Yazd¹

¹Shahid Sadoughi University of Medical Sciences, Iran

²ROJETechnologies, Iran

Type 2 diabetes (T2D) is the growing health problem in Yazd population, having a prevalence of 16.3% among adolescent. The level of consanguineous marriage is high (46%), hence a high level of homozygosity is predictable. Besides, this population has special predisposing life style of low relocation rates, a relatively high standard of living and large family sizes. To direct association and linkage studies in Yazd, we decided to calculate the heritability of type 2 diabetes in a population based family study. 2065 individuals were participated in The Yazd Diabetes family Study (YDS). The study was conducted among diabetic probands between 35-80 years, whose disease were confirmed in Yazd Diabetes Research Center, and their expanded families. Heritability was calculated for type 2 diabetes in SOLAR software package and was adjusted for common covariates (age, sex, age x sex, age² and BMI). The strongest heritability for type two diabetes ($h^2=0.56\pm 0.28$, P value=0.016) was seen in age group 40-60 years. However, in age group 20-60 years, heritability reduced to 0.22 ± 0.2 . The heritability for 40-75 years was 0.28 ± 0.11 . $\lambda_R=2.4$ and λ_R (nuclear family)=3.42 and $\lambda_S=3.14$ was seen in age group of 35 to 80 years. As a conclusion, for detecting high influenced genetic risk factor with $OR\geq 2$, it is recommended to conduct studies on individuals between 40 to 60 years. To cover all genetic risk factor either with less OR, it is better to limit the sample study on individuals with onset 40 to 75 years.

Biography

Ensieh Shahvazian has completed her MSc from Shahid Sadoughi University of Medical Sciences, Iran. She has accomplished several organized and valuable projects on Diabetes and Diabetic Retinopathy. She is also a Genetic R&D Researcher at ROJETechnologies.

nc.shahvazian@gmail.com

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