CONSANGUINITY ASSOCIATED KIDNEY DISEASES IN ADULT TURKISH POPULATION

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INTRODUCTION AND AIMS

Inbreeding and consanguineous marriages are known to increase the risk of autosomal recessive disorders (1, 2). The aim of this study was to examine the association between consanguinity and kidney diseases in the adult Turkish population.

METHODS

This study examined 1050 patients [mean age 47±16 years, 611 (58.2%) males with various kidney diseases. The study group included 681 (64.9%) patients with stage 1-5 chronic kidney disease and 369 (35.1%) transplant patients [living related (292, 27.8%), cadaveric (77, 7.3%)]. They were compared to a control group of 200 healthy individuals. Consanguineous marriages were identified by means of interview with the participants and/or their relatives.

RESULTS

The rate of consanguineous marriage in the patients' and control cases' parents were found to be 14.8% (n=155) and 12% (n=24), respectively (p=0.31). The patients in the study group had a significantly higher rate of family history of kidney disease compared to healthy controls [437 (%41.6) vs 13 (6.5%), p<0.001]. In the study group, 316 (30%) patients had an unknown etiology for their kidney diseases. Diabetes (n=132, 12.5%), IgA nephropathy (IgAN) (n=74, 7.1%), focal segmental glomerulosclerosis (FSGS) (n=62, 5.9%), tubulointerstitial nephritis (n=60, 5.7%), polycystic kidney disease (PKD) (n=58, 5.5%) and vesicoureteral reflux (VUR) nephropathy (n=56, 5.3%) were the most common diagnoses. The rate of consanguinity was significantly higher only in patients with VUR nephropathy (26.8%) compared to controls (12%) (p=0.006). Although the differences did not reach significance, patients with membranoproliferative glomerulonephritis (MPGN) (20.8%) and FSGS (16.1%) had higher consanguinity rates compared to controls (12%). Besides, the rate of family history of kidney diseases was significantly higher in patients with following diagnosis compared to controls (6.5%): FMF/Amyloidosis (72.2%, p<0.001), PKD (70.7%, p<0.001), IgAN (52.7%, p<0.001), membranous nephropathy (47.1%, p<0.001), MPGN (45.8%, p<0.001), VUR nephropathy (44.6%, p<0.001), FSGS (32.3%, p<0.001) and diabetic nephropathy (DN) (29.5%, p<0.001). Renal replacement treatment (RRT) requirement was significantly higher in the offspring of consanguineous couples (65.8%) compared non-consanguineous couples (54.9%) (p=0.011).

CONCLUSION

The offspring of consanguineous relations have an increased risk of VUR nephropathy which suggested a role of an autosomal recessive genetic disorder in the disease pathogenesis. Besides, the high risk of RRT requirement in patients with consanguinity may show that there may be a genetic disorder that can also affect the severity of the kidney diseases. A multi-approach educational and informative strategy should be performed for discouraging consanguineous marriages.

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