Donor-specific HLA antibodies in children after kidney transplantation

Lachova J.[1], Slavcev A.[2], Fornbaumova I.[2], Vichova P.[2], Stolbova S.[1], Zieg J.[1], Simankova N.[1], Dusek J.[1], Vondrak K.[1], Seeman T.[1]

[1] Department of Paediatrics, 2nd Faculty of Medicine, Charles University in Prague and Motol University Hospital

[2] Department of Immunogenetics, IKEM, Prague, Czech Republic

Introduction

Antibody mediated rejection (AMR) is the most common cause of late graft loss in patients after kidney transplantation. AMR is caused by recipient's antibodies specific to donor antigens (donor specific antibodies, DSA). The prognosis of AMR is severe and the risk of graft loss is significantly higher compared to cellular rejection.

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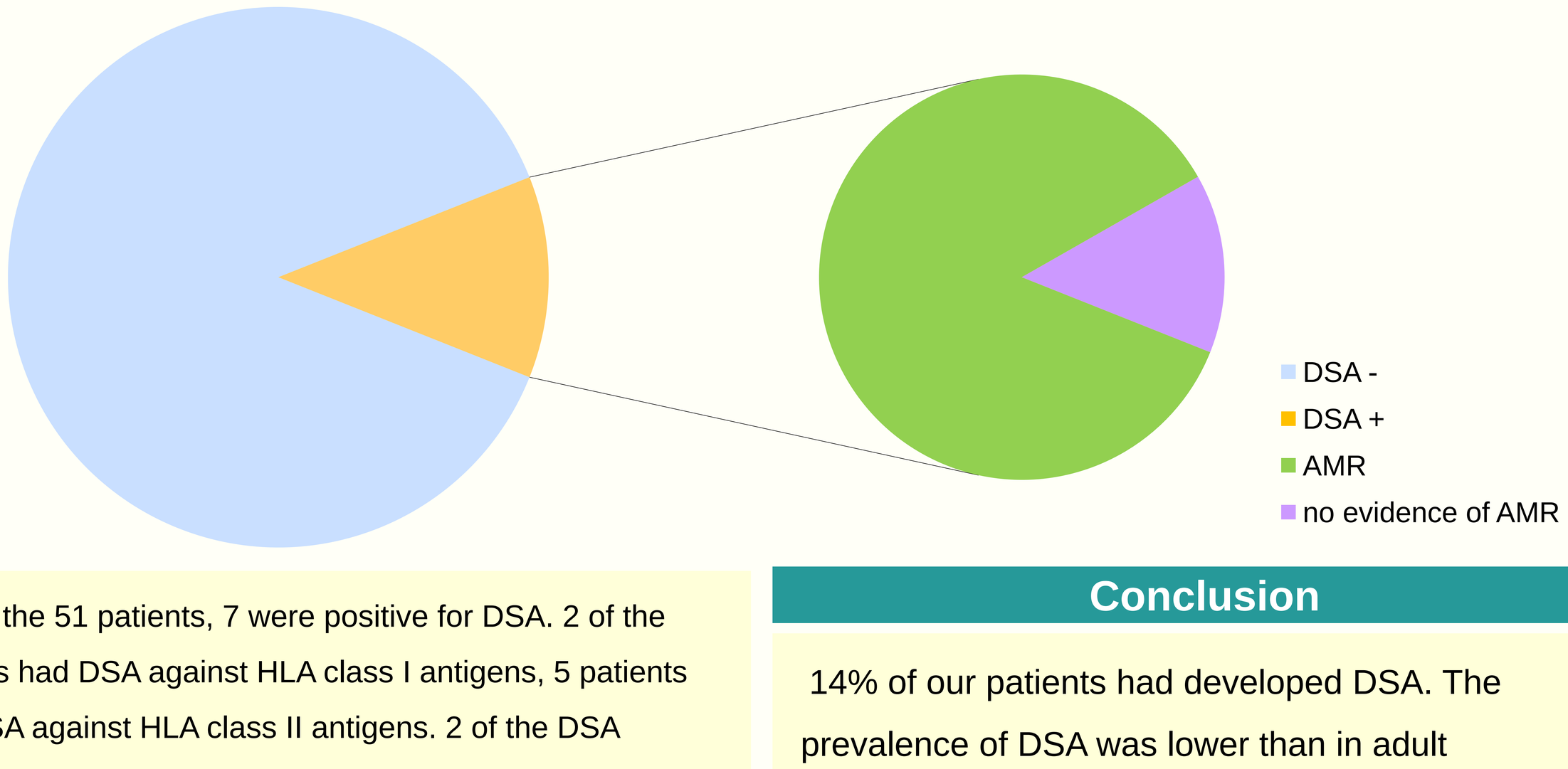
Methods

- The prevalence of DSA had been assessed in 51 children cross-sectionally.
- The mean age of patients was 13.6 years.
- The mean time after transplantation was 6.6 years (median 3 years; interval 0,3 – 16,7 years).
- Detection of antibodies was performed by solid phase method (Luminex).
- All sera had been first tested with LABScreen mix technique for presence/absence of antibodies. Positive sera were further tested using the LABScreen Single Antigen Class I and II tests for definition of HLA specificity.
- The AMR was diagnosed by biopsy (morphologic evidence of tissue injury and evidence of antibody interaction with vascular endothelium)

Results



Out of the 51 patients, 7 were positive for DSA. 2 of the patients had DSA against HLA class I antigens, 5 patients had DSA against HLA class II antigens. 2 of the DSA positive patients experienced antibody mediated rejection previously and 1 of those 2 patients lost the graft due to chronic AMR during the first year of the study. 3 of the DSA positive patients developed antibody mediated rejection within 18 months after the testing. All of the patients with newly manifested AMR had DSA against HLA class II antigenes.

Conclusion

14% of our patients had developed DSA. The prevalence of DSA was lower than in adult population. 5 of the DSA positive patients developed AMR and 1 patient lost his graft. The DSA negative patients had normal graft function. Early diagnostics and treatment of AMR could help improve graft survival and long-term prognosis of children after kidney transplantation.

Jitka Lachova, tel. +420 22443 2002, jitka.lachova@fnmotol.cz
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Jitka Lachova
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