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Steroid avoidance or withdrawal regimens in pediatric kidney transplantation: A meta analysis of randomised controlled trials

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Background: We combined the outcomes of all randomised control trials to investigate the safety and efficacy of steroid avoidance or withdrawal (SAW) regimens in paediatric kidney transplantation compared with steroid-based (SB) regimens.

Methods: A systematic literature search of PubMed, Embase, Cochrane Library, the trials registry and BIOSIS previews was performed. A change in the height standardised Z-score from baseline (Δ HSDS) and acute rejection were the primary endpoints.

Results: Eight reports from five randomised controlled trials were included, with a total of 528 patients. Sufficient evidence of a significant increase in the Δ HSDS was observed in the SAW group (mean difference (MD)=0.38, 95% confidence interval (CI) 0.07-0.68, P=0.01, particularly within the first year post-withdrawal (MD=0.22, 95% CI 0.10-0.35, P=0.0003) and in the prepubertal recipients (MD=0.60, 95% CI 0.21-0.98, P=0.002). There was no significant difference in the risk of acute rejection between the groups (relative risk=1.04, 95% CI 0.80-1.36, P=0.77).

Conclusions: The SAW regimen is justified in selected paediatric renal allograft recipients because it provides significant benefits in post-transplant growth within the first year post-withdrawal with minimal effects on the risk of acute rejection, graft function, graft and patient survival within three years post-withdrawal. These selected paediatric recipients should have the following characteristics: Prepubertal; caucasian; with primary disease not related to immunological factors; de novo kidney transplant recipient and; with low panel reactive antibody.

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Effect of bone marrow-derived mesenchymal stem cells combined with vitamin E on inflammatory reaction in acute kidney injury

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Aim of this study was to explore the effect of bone marrow-derived mesenchymal stem cells (BMSCs) combined with vitamin E on the inflammatory reaction in acute kidney injury (AKI) in rats. Gentamicin was used to induce AKI in the rats and the rats were treated with BMSCs combined with vitamin E. After treatment, the rat plasma and kidney tissues were collected and the inflammatory proteins were detected by real time quantitative PCR and ELISA. After the treatment with BMSCs combined with vitamin E, the inflammatory proteins were down-regulated in the plasma and the renal tissues. Compared with single treatment group, the decrease in the inflammatory proteins were more obvious in combined treatment group. The method of BMSCs combined with vitamin E takes the anti-inflammatory effect on AKI, indicating a new and potential mode in clinical application for AKI therapy.

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