

Immunosuppressive therapy for kidney transplantation in children and adolescents: systematic review and economic evaluation

Marcela Haasova,^{1*} Tristan Snowsill,¹
Tracey Jones-Hughes,¹ Louise Crathorne,¹
Chris Cooper,¹ Jo Varley-Campbell,¹
Ruben Mujica-Mota,¹ Helen Coelho,¹ Nicola Huxley,¹
Jenny Lowe,¹ Jan Dudley,² Stephen Marks,³
Chris Hyde,¹ Mary Bond¹ and Rob Anderson¹

¹Peninsula Technology Assessment Group (PenTAG), Evidence Synthesis & Modelling for Health Improvement, University of Exeter, Exeter, UK

²Department of Paediatric Nephrology, Bristol Royal Hospital for Children (University Hospitals Bristol NHS Foundation Trust), Bristol, UK

³Department of Paediatric Nephrology, Great Ormond Street Hospital for Children NHS Foundation Trust, London, UK

*Corresponding author

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Plain English summary

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Kidney transplantation is the preferred treatment for people with end-stage kidney disease. Without immune-suppressing medications, the transplanted kidney would be rejected or lost. To prevent rejection and loss, a combination of medications to dampen the immune system are used. The aim of this assessment was to evaluate the clinical benefits and cost-effectiveness of nine immune-suppressing drugs in children and adolescents. We searched for relevant studies in major databases, trial registries, systematic reviews and references of included studies. All included studies were assessed for their quality.

The review included three randomised trials and four non-randomised studies. The randomised trials evaluated two drugs [basiliximab (BAS) (Simulect,[®] Novartis Pharmaceuticals) and tacrolimus (TAC)] and their results were used in cost-effectiveness analyses. No child/adolescent randomised trials were found for the other immune-suppressing drugs. We found statistically significant improvements in transplanted kidney function and proven acute rejection for TAC compared with ciclosporin (CSA) in one trial. The cost-effectiveness analyses suggested that TAC is cost-effective when compared with CSA. BAS was found to be cost-effective in one trial-based analysis but not to be cost-effective in another. An economic model, based on evidence from adults, indicated that only one drug combination (BAS followed by immediate-release TAC and azathioprine) would be cost-effective.

In summary, there is very limited evidence for how effective immune-suppressing drugs are in children and adolescents, and cost-effective analyses comparing all immune-suppressing medications may need to rely on results from studies in adults.

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This report

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