

A Preventative Strategy for Autosomal Dominant Polycystic Kidney Disease: An Economic Evaluation

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INTRODUCTION	Autosomal Dominant Polycystic Kidney Disease (ADPKD) is the hereditary kidney disease that most frequently causes renal failure. Dialysis and transplantation are the therapeutic alternatives currently used. These renal replacement therapies (RRT) entail high health expenditures. There is still no curative treatment for ADPKD. The objective of this work is to analyse the cost-effectiveness of a preventative strategy aimed to stop ADPKD transmission and based on assisted human reproduction plus preimplantation genetic testing (IVF ICSI + PGT).
METHODS	A comparative analysis of the costs of the IVF ICSI + PGT alternative versus the RRT cost was carried out. The RRT cost was obtained from the specialised literature. The cost of the preventative strategy was calculated by adding the costs of an assisted reproduction procedure in a public hospital and the market price of the PGT in Spain. The average cost of a standard patient during the natural course of the disease has been calculated with patients' records from the registry of Granada (Spain).
RESULTS	The average costs of transplantation (47,136 and 6,477 euros/year, first year and successive years respectively), haemodialysis (44,778 euros/year), and peritoneal dialysis (34,554 euros/year) are notably higher than costs of preventing the transmission of the disease (5,520–6,020 euros). An incremental cost-effectiveness ratio in favour of the preventative strategy was obtained in a scenario with three single embryo transfers.
CONCLUSIONS	From the perspective of the cost-effectiveness analysis, the preventative strategy proved to be a superior alternative to the renal replacement therapies currently applied. Thus, it would be advisable to promote the strategy of preventing transmission of the disease through assisted human reproduction and genetic testing. Despite the positive contribution of this strategy to the economic sustainability of the public health system, a decided health policy action in its favour is still needed.