

Cost-Effectiveness Analysis of Dialysis, Kidney Transplant from a Living Person or a Cadaver in Patients with Renal Impairment using DALY Measure

Abstract

Introduction: A considerable proportion of the health budget is allocated to the growing number of patients with End-Stage Renal Diseases (ESRD). Therefore, the massive demand for renal replacement therapy costs has become a great burden for the healthcare systems in developing countries. Chronic kidney disease (CKD) and ESRD were raised as public health problems in developing countries, thus, a change in healthcare policies was required. This study aimed to compare the cost-effectiveness of three therapy methods of long-term hemodialysis, kidney transplant from a living person and kidney transplant from a cadaver using DALY measure.

Methods: This cross-sectional study was designed to compare the cost-effectiveness of three therapy methods of long-term hemodialysis, kidney transplant from a living person and kidney transplant from a cadaver using DALY measure by using data from the records of patients referred to Afzalipour Hospital of Kerman for treatment in ۲۰۱۲. The decision tree model and Tree Age Software ۱۱ were used for data analysis. In the decision tree, direct medical expenditures (equipments used and personnel fees) and tariffs paid by the patient or the supporting centers for dialysis and kidney transplantation patients, indirect costs (such as travel costs, loss of working days and accommodation costs) and effectiveness as well as the possibilities were considered. In this research, costs and outcomes were studied from the perspective of the patient and the health system.

Results: From the patient's perspective, the C-E ratio in transplant from a living person was ۳۹ million Rials/DALY, in transplant from a cadaver ۳۱ million Rials/DALY and ۱۹۶ million Rials/DALY in chronic dialysis. From the perspective of the health system, the C-E ratio in transplant from a living person was ۲۲ million Rials/DALY, in transplant from a cadaver ۱۳ million Rials/DALY and ۱۹۰ million Rials/DALY in chronic dialysis. In the patient's perspective, the cost-effectiveness ratio of dialysis was ۵,۰۴ times greater than transplant from a living person and ۶,۱۵ times larger than transplant from a cadaver. In the hospital's perspective, the cost-effectiveness ratio of dialysis was ۸,۴ times greater than transplant from a living person and ۱۴,۰۷ times larger than transplant from a cadaver. Regarding the fact that the smaller the C-E ratio, the greater the cost-effectiveness, in both perspectives the order of effectiveness of treatment methods are transplant from a cadaver, transplant from a living person and dialysis.

Conclusion: The results obtained in this study with regard to both the patient and the healthcare system perspectives suggest that transplant from a cadaver is more cost-effective

than the other two treatment methods, transplant from a living person and dialysis. Considering the results obtained in this study, we suggest that measures should be implemented to increase the desire for organ donation from brain dead patients, living people and patient relatives.

Keywords: Cost-Effectiveness, DALY, Chronic Dialysis, Kidney Transplant



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