Economic relevance of cyclosporine microemulsion in kidney transplanted patients
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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Switching to microemulsion cyclosporine (ME) in kidney transplanted patients using conventional cyclosporine (CsA).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Kidney transplant patients.

Setting
Hospital. The economic study was carried out in France.

Dates to which data relate
Effectiveness and resource use dates were not given. The fiscal year was 1997.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was prospectively undertaken on the same patient sample as that used in the effectiveness analysis.

Study sample
Power calculations were not used to determine the sample size. A total of 181 patients entered the study. The study group with a medium age of 42 (SD, 13) years consisted of 148 first, 30 second, and 3 third kidney grafts.

Study design
This was a prospective before-and-after study, carried out in a single centre. The duration of the follow-up was 6 months after conversion. No loss to follow-up was reported.

Analysis of effectiveness
The analysis of effectiveness was based on intention to treat. The health outcome measures were the occurrence of HTA, adverse effects, acute rejection episodes, and chronic rejection. The pharmacological and biological measures were mean serum creatinine, mean CsA dosage, and mean CsA trough level.

**Effectiveness results**
The patients experienced an 80% occurrence of HTA, 72 cases of adverse effects, 11 cases of 2 or more adverse effects, 25.4% of acute rejection episodes, and 40 cases of chronic rejection while using conventional CsA. In the few days after conversion, 17 patients experienced an increase in previous adverse effects and 34 had de novo adverse effects. However, the patients experienced improvement from the adverse effects of conventional CsA, and were cured from the adverse effects of ME at the beginning of the conversion. Before conversion, the mean serum creatinine, mean CsA dosage, and mean CsA trough level were 154 (SD, 53) micromol/L, 270 (SD, 75) mg/d, and 121 (SD, 31) ng/mL. At month 6 after conversion, the decrease in serum creatinine and CsA trough level was significant (p=0.006 and 0.002 to 0.03, respectively). At 6 months, a total of 62.5% of patients experienced reduction in CsA dosage with an 11.9% (range: 6.2% to 46%) reduction in the initial value.

**Clinical conclusions**
The reduction in the CsA dosage was achieved without prejudice to renal function, even if the patient experienced a chronic rejection before the switch. The authors observed an increase in cyclosporine adverse effects with the 1:1 conversion, but after CsA adaptation all the patients with adverse effects were improved.

**Measure of benefits used in the economic analysis**
No summary benefit measure was identified in the economic study, and only separate clinical outcomes were reported.

**Direct costs**
Cost discounting was not required as the study period was less than one year. Quantities were not reported separately from the costs. Cost analysis covered only the costs of medicine, which were obtained from the hospital dispensary. 1997 price data were used.

**Statistical analysis of costs**
Student's t test was used in the cost analysis.

**Indirect Costs**
Not considered.

**Currency**
French francs (Ffr). A conversion to US dollars ($) was carried out.

**Sensitivity analysis**
Not performed.

**Estimated benefits used in the economic analysis**
Not applicable.

**Cost results**
The mean monthly cost of conventional CsA was $432.8 (SD, 120) corresponding to Ffr2,478. At month 6, the
monthly cost of ME was $380.3 (SD, 110) corresponding to Ffr2,177, and resulting in a saving of $52. (p=0.0001).

Synthesis of costs and benefits
No synthesis was performed since the conversion to ME was the dominant strategy.

Authors' conclusions
The conversion from conventional cyclosporine (CsA) to microemulsion cyclosporine (ME) in kidney transplanted patients was shown to be a cost-effective strategy.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator is clear.

Validity of estimate of measure of effectiveness
The internal validity of the effectiveness results seems to be assured. In view of the lack of a unique benefit measure in the economic analysis, the study can be classified as a cost-consequences study.

Validity of estimate of costs
Resource use was not reported separately from the cost and the costs of adverse effects were not included in the cost analysis. The study appears to lack a comprehensive cost analysis.

Other issues
In view of the lack of randomisation, sensitivity analysis, and a comprehensive cost analysis, the results need to be treated with some caution. The issue of generalisability to other settings or countries was not addressed. No dates were given for the effectiveness, and resource use data.

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