

The costs and harms of institutional transport for haemodialysis

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Background

Institutional transport for haemodialysis is expensive and a frequent source of patient dissatisfaction. Vehicle entry and exit accidents are not uncommon, and cross-infection often suspected, but the overall influence of transport on clinical outcomes is unknown.

Methods

In a cohort of stable haemodialysis patients at a single renal centre, administrative data were collected on institutional transport provided during January 2011. Clinical and financial aspects of these data were analysed along with subsequent patient survival.

Results

Out of 1173 patients, transport was provided for 685 (58.4%), with patients receiving an average of 21.0 journeys, of 4.8 miles per journey, during the index-month. The average cost of these journeys was £6.49 per patient-mile, representing a total institutional cost of £341,047.14 for haemodialysis transport for one month.

Patients receiving transport were older than those making their own journeys (67.4+/-13.7 vs 58.9+/-14.6, $p<0.001$), but there was no significant difference in major medical comorbidity.

Over a mean observation period of 4.8 years (5,630 patient-years) there were 699 deaths (59.6%), with institutional transport associated with shortened survival (4.3 vs 5.8 years, $p<0.001$). In a Cox proportional hazards model, age, previous vascular events and institutional transport were all independently predictive of survival (HR 1.44 for transport, $p<0.001$).

The association between transport and survival was analysed at unit level, using the centre's nine separate dialysis satellite units to reduce bias by indication (with unit functioning like an instrumental variable). Dialysis unit was strongly predictive of survival ($p<0.001$) and a strong negative correlation between the proportion receiving transport at the unit, and 7-year survival was observed ($R=0.878$, $p=0.002$).

Conclusion

Independent of age and comorbidity, institutional transport is associated with reduced survival in haemodialysis patients, with instrumental variable analysis suggesting a genuinely causal association. Along with cost and poor patient experience, these data argue for a rethink of haemodialysis transport policies.