Donor morbidity associated with right lobectomy for living donor liver transplantation to adult recipients: a systematic review

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Authors' objectives
To determine donor morbidity associated with right lobectomy for living donor liver transplantation (LDLT) to adult recipients.

Searching
MEDLINE was searched from 1995 to June 2001 using the terms 'living donor' and 'living transplantation'; the search was restricted to publications in the English language. The reference lists of the retrieved studies were also examined.

Study selection
Study designs of evaluations included in the review
No restrictions were placed on the included study designs. Population studies, consecutive and non-consecutive case series were included. Studies not published as full reports were excluded, with the exception of a single article from the authors' institution that was in the process of publication. There were no limitations set on the follow-up times. The mean follow-up period was only reported in three studies; it ranged from 254 to 416 days.

Specific interventions included in the review
Right lobectomy for liver transplantation to recipients aged 18 years or over.

Participants included in the review
Living donors for liver transplants to adults. The included studies described a total of 1,151 LDLTs, including 409 right lobe donors to adult recipients. Five studies included only right lobe donors to adult recipients, whilst seven studies also included left lobe donors and/or donors to child recipients.

Outcomes assessed in the review
Donor post-operative morbidity and mortality were the outcomes assessed. All studies assessed at least one of the following: post-operative complications, length of hospital stay, readmissions, recovery time, return to pre-donation occupation, health-related quality of life, and mortality.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, other than that the abstracts were reviewed against predetermined criteria. The authors also do not state how many of the reviewers performed the selection.

Assessment of study quality
The authors do not state that they assessed validity.

Data extraction
The authors do not state how the data were extracted for the review, other than that they were summarised in evidence tables. The authors also do not state how many of the reviewers performed the data extraction.

The data extracted included: period of transplantations, location, form of data collection, sample size, procedure, mean follow-up, reported complications, and outcomes.

Methods of synthesis
How were the studies combined?
A meta-analysis was not carried out due to heterogeneity, but the data were combined by summing the events and denominators for each study to provide crude summary rates.

How were differences between studies investigated?
Differences were noted with respect to study duration, assessment measures and clinical outcomes, but these were not investigated further.

Results of the review

Twelve studies were included. One study was a chart review, one a multicentre survey and two were donor surveys, whilst the remaining eight studies did not report how the data were collected. Eleven studies were based on single centres. The studies took place in the USA, Japan, Hong Kong and Europe. There were 409 reported cases in total, with 38% (n=148) from the Asian studies. The sample size ranged from one case to 111 cases in the multicentre survey.

Morbidity ranged from 0% (0 out of 1) to 67% (9 out of 15), although no study gave a definition of morbidity so the reported events may exclude minor events in some studies. Of the 54 reported events in 174 right lobe donors, the most common were bile leak, prolonged ileus, and minor wound complications. The two largest studies did not report morbidity separately for the right and left lobes, so they did not contribute data to this outcome. Two of the 3 studies that reported readmissions had no donors readmitted (out of a total of 51 donors), while 4 of the 14 donors in the third study were readmitted. Of the 7 studies that reported mortality, 5 studies had 0% mortality. Two donor deaths were reported, one of which was in a study that did not differentiate between right and left lobe donors or between donors to adult and child recipients.

The overall mean hospital stay was 9.9 days in 8 studies (n=175), with the study means ranging from 5.4 to 16.5 days. Two studies included the self-reported time to complete recovery. One reported that 24 donors recovered within 3.4 months, while the other reported a mean recovery time of 13 weeks (range: 4 to 52) for 14 donors. In the 3 studies reporting return to pre-donation occupation, one of the 60 donors could not return due to chronic fatigue syndrome. One study reported a majority requiring a period (mean: 2.8 months) of light duties first.

Two studies reported health-related quality of life indices. In spite of some mild continuing symptoms, all 24 donors in one study reported that they would donate again. The other reported no significant changes in physical or social activity or emotional stability, and all would donate again.

Authors' conclusions

The reported morbidity associated with live donor right lobe donation varied widely. This broad range was likely to be caused by varying definitions of complications. Standardised definitions of morbidity, and better methods for observing and measuring outcomes, are necessary to understand and potentially improve morbidity.

CRD commentary

The review question was clear, but two of the included studies contained no separate outcomes for right lobectomy. The authors carried out no validity assessment of the included studies. No details of the process of the review were reported, so it is not possible to judge whether the methodology was adequate. The search was confined to MEDLINE and reference lists, and to published English language papers, so relevant research is likely to have been missed. There is a possibility of publication bias towards successful outcomes, as unpublished studies were not sought. Details of the studies were reported well, and the synthesis was reasonable given the scarcity and poor quality of the available data.

The conclusions followed from the results.

Implications of the review for practice and research

Practice: The authors did not state any implications for practice.

Research: The authors state that future studies should report live donor outcomes more explicitly, using standardised definitions of morbidity.
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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.