A Regional Explantation Team: A Big Step Forward in the Organisation of Organ Procurement

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Following the introduction of multiorgan harvesting from one donor, the organisation of an organ donation procedure has become more complex. The long waiting time in the donor hospital between declaration of death and start of the harvesting procedure, the multiple surgical teams with different nationalities involved in the operative procedure, and the transportation of teams and organs are important factors jeopardising organisation. One surgical team that harvests all organs in donor hospitals in a certain region may solve these organisational problems. Such a regional team, called RUN, has operated since October 1994 in the Nijmegen region of The Netherlands (3.9 million inhabitants, 26 donor hospitals) and the results of RUN are reported.

Characteristics of the RUN

- Round-the-clock availability.
- Experience in harvesting procedures of all abdominal organs.
- Acknowledgement from transplant centres.
- Support from University Hospital, Nijmegen, in which the RUN is based.

Results

Four surgeons and three organ procurement coordinators participated in RUN; each multiorgan donation (MOD) procedure was done by two of these surgeons and one organ procurement coordinator. From October 1994 through August 1996 RUN performed 63 MOD procedures. From these 63 donors, the team explanted 55 livers for transplantation; 8 livers were discarded for transplantation during surgery, mainly because of cirrhosis or steatosis. Eleven pancreata were explanted for transplantation and 35 for \( \beta \)-cell isolation (Table 1). In this period of 22 months, the MOD procedure was performed only three times by another team: once because of simultaneous MOD procedures, and twice because the specific transplant centres themselves insisted on explantation of the organs.

Since the RUN has been active, the entire MOD procedure has been shortened by several hours. A shorter stay of the donor in the intensive care unit (ICU) after brain death and before explantation accounted for this reduction in time.

Donor Organ Feedback Report

A donor organ feedback report was sent to the transplant centres for "quality control" of the procured livers and pancreata. From the 52 donors liver feedback reports sent out, 46 (88%) have been returned, and from the 11 donor pancreas feedback reports 8 (73%) have been returned. No organs were lost due to organisational reasons or technical errors. Two livers showed minor vascular damage, which was successfully repaired by the transplant teams and did not adversely affect the postoperative transplant function. The transplant centres were very satisfied with the logistics of the MOD procedure—the time, personnel, and transportation saving aspects in particular.

Table 1. Abdominal Organs Procured by RUN Between October 1994 and August 1996

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Liver explanted (discarded) for transplantation</td>
<td>6</td>
<td>37</td>
<td>20</td>
<td>63</td>
</tr>
<tr>
<td>Pancreas explanted for transplantation</td>
<td>5 (0)</td>
<td>31 (7)</td>
<td>19 (1)</td>
<td>55 (8)</td>
</tr>
<tr>
<td>Pancreas explanted for ( \beta )-cell isolation</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Kidneys explanted (discarded) for transplantation</td>
<td>12 (0)</td>
<td>70 (4)</td>
<td>39 (1)</td>
<td>121 (5)</td>
</tr>
</tbody>
</table>

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Table 2. Results of the Questionnaire Sent to OR Staff in Donor Hospitals

<table>
<thead>
<tr>
<th>Questions</th>
<th>Yes</th>
<th>No</th>
<th>More efficient concerning organisation surgical procedure</th>
<th>More efficient concerning surgical techniques</th>
<th>More efficient concerning time-span of surgical procedure</th>
<th>Calmer atmosphere in the operating room</th>
<th>More structured and well-ordered</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you satisfied about the way this MOD procedure was organised?</td>
<td>63</td>
<td>2</td>
<td></td>
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<tr>
<td>What is your opinion about RUN in comparison with multiple surgical teams?*</td>
<td></td>
<td></td>
<td>More efficient concerning organisation surgical procedure</td>
<td></td>
<td>More efficient concerning surgical techniques</td>
<td>More efficient concerning time-span of surgical procedure</td>
<td>Calmer atmosphere in the operating room</td>
<td>More structured and well-ordered</td>
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<tr>
<td>Do you feel RUN should be expanded with an OR nurse?</td>
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<tr>
<td>Do you feel RUN should be expanded with a thoracic surgeon?</td>
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</tbody>
</table>

More answers could be given in response to this question.

Questionnaire Operating Room (OR) Staff Donor Hospital

From September 1995 a questionnaire was sent to the local OR nurses and the anesthesiologist involved in the MOD procedure. From the 72 forms (ie, 36 MOD procedures) sent thus far, 65 (90%) have been returned. Table 2 shows the answers to the questions.

DISCUSSION

Within the Eurotransplant area regional explantation teams are rare. The vast majority of organs are harvested by procurement teams of the transplant centres themselves. As reported by Ysebaert et al, organisational problems are numerous when multiple surgical teams are involved in one MOD procedure. Recently, a regional explantation team from Munich reported a high quality of organ retrieval with a simultaneous reduction of personnel requirements for the transplant centres. There was a positive resonance of donor hospitals, which in turn may favourably effect donor activity.

The first results of the RUN are encouraging and in concordance with those of the Munich team. Good quality of procured organs has thus far been demonstrated, transplant centres are satisfied, and the atmosphere in the operating room during the MOD procedure seems to be improved. Because of the shorter stay of the donor in the ICU the risk of donor haemodynamic and respiratory collapse during the brain death phase is diminished. This aspect may have increased the MOD percentage in our region; in 1994, the MOD percentage was 49%, in 1995 it was 61% and in 1996 it was 71% (until September 1). A regional explantation team is probably more cost efficient, especially because of reduction of personnel and transportation costs, although this is hard to substantiate because of the complex financial structure within Eurotransplant and the transplant centres. To increase the benefit of a regional explantation team like RUN, the expansion of the team with a thoracic surgeon is mandatory. Presently, central organisation of organ procurement and establishment of regional explantation teams in The Netherlands is being investigated.

REFERENCES
