Dying from heart failure in hospital

Sir,

The course of heart failure (HF) is difficult to predict.\(^1\) The quality of life in patients with advanced HF is often poor, and death happens in the hospital even when the patients have already been placed in community-based, long-term care.\(^2\) Consequently, end-of-life management policies are needed to address hospitalized end-stage HF patients. We evaluated whether an educational intervention had a positive impact in the quality of the palliative care provided to elderly HF patients who die in the hospital.

In a previous observational study focused on 118 patients who died from end-stage HF in our hospital (a tertiary 1000-bed teaching centre), we reported low rates of palliative care provision.\(^3\) To address that issue, we developed an educational program whose aims and content were disseminated at a general hospital meeting, and at another meeting specifically designed for the members of the Internal Medicine Service. Both doctors and nurses received training on the basic palliative measures available for the care of all terminal HF patients. Specific training was also offered to our medical students, and our medical residents, in the setting of a post-graduate teaching course.

In the following months, patients admitted to the Internal Medicine ward because of end-stage chronic obstructive pulmonary disease, dementia or HF were systematically identified.\(^4\) The methods used have been described in detail in previous reports;\(^3\)–\(^4\) briefly, we retrospectively reviewed the medical records of all consecutive elderly patients (64 years of age or older) who died from end-stage HF. Exclusion criteria were: incomplete data, sudden death, death within the first 48 h following admission, or death caused by another disease unrelated to HF. All written information concerning do-not-resuscitate (DNR) orders, graduation of therapeutic decisions, information provided to relatives about the prognosis of the disease, total withdrawal from ‘supportive’ therapy and provision of palliative care was abstracted from the medical records. Post-intervention data were tabulated and compared with pre-intervention data using conventional descriptive statistics (\(\chi^2\) test, and Student’s \(t\) test) All tests were two-sided, with \(p = 0.05\) as the criterion for statistical significance.

Table 1 shows the study results. Mean age was similar in both groups, but a slightly higher prevalence of women and shorter length of stay was observed in the post-intervention cohort. These results confirm that, in the absence of specific training, only DNR orders are implemented in a substantial proportion of cases, probably meaning that doctors and nurses are most aware of this component of palliative care provision. Indeed, performance in this particular aspect of palliation increased only slightly after the educational intervention, probably implying limited room for improvement. However, the remaining components of palliative care improved significantly after the intervention. It should be noted that the rate of information provided to relatives was probably higher than reported in both groups, since this specific intervention is not usually recorded in the medical charts. To clarify how persistent the effects of this educational intervention are, will need a further evaluation.

The competence in geriatrics of general internists should be a subject of interest in Internal Medicine Postgraduate training programs.\(^5\) Considering that many terminal HF patients die in the hospital environment, in many cases while admitted to an Internal Medicine Service, the future care procedures of these Services should include end-of-life

Table 1  Comparative analysis between data obtained before (pre-intervention) and after (post-intervention) the implementation of the educational intervention

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention (n=118)</th>
<th>Post-intervention (n=90)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (years)</td>
<td>79.5</td>
<td>80.6</td>
<td>NS</td>
</tr>
<tr>
<td>Female</td>
<td>60 (51%)</td>
<td>51 (57%)</td>
<td>0.04</td>
</tr>
<tr>
<td>Length of hospital stay (days)</td>
<td>13</td>
<td>9,4</td>
<td>0.03</td>
</tr>
<tr>
<td>DNR orders</td>
<td>38 (32%)</td>
<td>32 (36%)</td>
<td>0.02</td>
</tr>
<tr>
<td>Graduation of therapeutic decisions</td>
<td>12 (10%)</td>
<td>23 (25%)</td>
<td>0.003</td>
</tr>
<tr>
<td>Information provided to relatives</td>
<td>30 (25%)</td>
<td>41 (46%)</td>
<td>0.004</td>
</tr>
<tr>
<td>Total withdrawal from ‘supportive’ therapy</td>
<td>22 (18%)</td>
<td>31 (34%)</td>
<td>0.01</td>
</tr>
<tr>
<td>Provision of palliative care</td>
<td>26 (22%)</td>
<td>50 (56%)</td>
<td>0.0005</td>
</tr>
</tbody>
</table>
policies aimed at the improvement of the comfort and well-being of the patients who have reached the final stages of the disease.

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doi:10.1093/qjmed/hcg131

Management of shock in children with severe P. falciparum malaria

Sir,

I read with interest the recent article by Maitland et al.1 Based on their careful and detailed observations on children with severe P. falciparum malaria, they recommend volume replacement in patients with evidence of hypovolaemia. However, I would like to express certain concerns.

In this study, among children who died, shock and acidosis were present in 84% and 90%, respectively. Thus, acidosis was more commonly observed than shock. As the authors have suggested, acidosis is multifactorial in origin in these cases. Renal failure, commonly seen in the setting of severe malaria, is one of the important contributing factors towards the development of acidosis. Renal failure in severe malaria may not respond to volume replacement, and often necessitates dialysis. In an Indian study, dialysis was required in 92% cases of severe malaria with renal failure.2 In another study, haemodialysis was required in both oliguric and nonoliguric forms of acute renal failure in cases of severe malaria. In this study, 90.2% of patients underwent haemodialysis (at a mean number of 6.5 times and range 1–27).3

If volume replacement is chosen for all children with shock and acidosis, there is a possibility of fluid overload, especially in patients with oliguric acute renal failure. Moreover, the outcome of these children may not improve without dialysis and intense dialysis has been found to be safe and effective in the treatment of acute renal failure in children.4

In conclusion, I would agree with the authors that shock, acidosis and acute renal failure are associated with increased mortality in children with severe malaria. However, intense dialysis instead of fluid replacement may be required in many of these patients for a better survival.

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doi:10.1093/qjmed/hcg132

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