Prevalence of impaired renal function in medical inpatients

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Dear Sir,

Renally cleared drugs may cause problems in patients with renal insufficiency (RI). Our focus is on low molecular weight heparins (LMWH) [1] which are used in 50–90% of medical inpatients [2]. Although the prevalence of RI in the general public is well known [3], there are scant data for medical inpatients. On two days in the medical department of a tertiary care hospital we conducted a cross-sectional study including all inpatients except those on intensive care. Glomerular filtration rate (GFR) was calculated (MDRD) and renal function was classified (stages 1–5) as described [3].

A total of 352 patients were included (149 women), with median age 72 years (range 16–93), and BMI 24.8 kg/m² (range 14.4–61.0). We found a negative correlation between age and GFR (rS = –0.466, p <0.0001), but no influence of gender on GFR (p = 0.38). The frequency of RI (Table 1) was higher in our population than in the general public [3], as could be assumed given medical inpatients’ age and comorbidity. Our results are comparable with those among selected populations [4] and closely match those of a recently published study [5]. 82% of our patients were on some form of anticoagulation, chiefly with LMWH (69% of all patients). Use of anticoagulants did not differ in patients with stage 4 and 5 RI compared to others (79% vs. 83%, p = 0.6) although LMWH were used less often (50% vs. 88%, p <0.0001).

<table>
<thead>
<tr>
<th>Stage</th>
<th>GFR mL/min per 1.73 m²</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or healthy ≥90</td>
<td>134 (38%)</td>
<td></td>
</tr>
<tr>
<td>2 or healthy 60–89</td>
<td>128 (37%)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>57 (16%)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>15 (4%)</td>
<td></td>
</tr>
<tr>
<td>5 with dialysis</td>
<td>12 (3%)</td>
<td></td>
</tr>
<tr>
<td>5 without dialysis &lt;15</td>
<td>6 (2%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 Distribution of renal function (calculated glomerular filtration rate, GFR).

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