Diagnosis and treatment of intraoperative hypotension during hip fracture management: Fourth survey project by National Hip Fracture Perioperative Network (HipPeN4)

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This questionnaire study was designed to ascertain the thresholds for corrective intervention of intraoperative hypotension, during hip fracture anaesthesia, among anaesthetists regularly involved in care of these patients.

Hip fracture is one of the leading causes of hospitalisation and surgery in the elderly. Hypotension under anaesthesia, a surrogate for compromised end-organ perfusion, is prevalent. It is poorly tolerated on account of diminished physiological reserves. Recent evidence suggests that in elderly, blood pressure values significantly higher than conventional standards are required for reduced mortality [1]. We conducted a survey of UK anaesthetists regularly involved in the care of these patients to ascertain the existing practice in this area.

Methods
A link to online survey questionnaire (www.surveymonkey.com) was sent to all 218 members of NHS Hip Fracture Perioperative Network (HipPeN), representing 130 hospitals. Recipients were also requested to forward the questionnaire to other anaesthetic colleagues regularly involved in the management of hip fracture patients. Online tools were incorporated to exclude from the survey the respondents who did not fulfil the above criteria. Consent was implied by questionnaire completion.

Results
Of the 385 responses received; 44 (11%) were excluded according to the above criteria. The response rate from the network was 67% (n=148). The respondents' had a very broad range (0-100%) of opinion regarding prevalence of hypotension, however 40% agreed that incidence was similar under RA and GA (Figure 1). Preferred anaesthetic technique, with or without nerve blocks, was RA 54% and GA 30%. Most of them routinely recorded baseline blood pressure before induction (92%), and frequent intra-operative readings (99%) (Figure 2). Tissue perfusion was monitored in up to 10% patients with various equipment, but none used Cerebral Oximetry. On average, 1.5L crystalloids, 0.8L colloid, and 0.2L blood was routinely administered intraoperatively. α-agonists were preferred to treat hypotension by 56% of the respondents. There was a wide variation in respondent's diagnosis of hypotension (Table 1).

Discussion
This survey demonstrates considerable variation among anaesthetists in the perception, diagnosis and management of hypotension in elderly patients undergoing hip fracture surgery in the UK. There is a need for large scale studies to define hypotension in these patients, in order to promote its improved management and thereby reduce associated morbidity and mortality.

Acknowledgment: The AAGB&I provided the cost of the questionnaire administration.

Table 1 Diagnosis of hypotension, as envisaged by respondents (in percent, bold), based on absolute values (mmHg) of SBP* or MAP†, or their fall from baseline

<table>
<thead>
<tr>
<th>Absolute SBP</th>
<th>SBP % fall</th>
<th>Absolute MAP</th>
<th>MAP % fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;100</td>
<td>&lt;90</td>
<td>&gt;20</td>
<td>&gt;30</td>
</tr>
<tr>
<td>59%</td>
<td>31%</td>
<td>51%</td>
<td>43%</td>
</tr>
<tr>
<td>49%</td>
<td>42%</td>
<td>63%</td>
<td>30%</td>
</tr>
</tbody>
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Figure 1: Anaesthetic technique most associated with ↓BP

Figure 2: Intra-operative BP monitoring frequency (min)

Reference