Simulation Training in the Adult Major Haemorrhage Protocol

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Introduction

Excessive blood loss is common and can jeopardise the survival of adult patients in many clinical settings. Moreover, deleterious outcomes in major haemorrhage can also be attributable to failings in healthcare processes, as highlighted by the National Patient Safety Agency (NPSA).

The early recognition of significant blood loss and the initiation of effective actions are therefore vital. One such solution is activation of an Adult Major Haemorrhage (AMH) protocol, which triggers a coordinated chain of events and leads to the rapid release of blood and blood components. Its success however also relies upon efficient communication, effective teamwork and thorough knowledge of the protocol.

The aims of this study were to determine if high-fidelity AMH simulation training increases healthcare professionals’ knowledge of and confidence in using the Oxford University Hospitals (OUH) NHS Trust’s AMH protocol.

Methods

Study design and participants

Prospective cohort study undertaken between March-May 2014 involving Foundation Year 1 (FY1) doctors in the OUH NHS Trust.

Study procedures

Eligible participants were recruited to either the intervention (undertakes AMH simulation training) or control (does not undertake AMH simulation training) group. For the study duration, the control group were exposed to AMH only through their normal clinical practice, whereas the intervention group received (in addition to their normal clinical practice) a full-day simulation training session which included lectures on the AMH protocol, human factors and communication skills. Simulation training took place at the ‘Oxford Simulation, Teaching and Research’ (OxStaR) centre.

All participants completed a questionnaire to assess their knowledge of and confidence in using the AMH protocol both 1 month before and 1 month after the date of simulation training (referred to as the ‘pre-simulation’ and ‘post-simulation’ questionnaires respectively).

Statistical analyses

Data between intervention and control groups were compared using the independent t-test and statistical significance was assumed at the p<0.05 level.

Results

<table>
<thead>
<tr>
<th></th>
<th>Intervention (n=15)</th>
<th>Control (n=15)</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Median, IQR)</td>
<td>25 [24-25.5]</td>
<td>25 [24-25]</td>
<td>1</td>
</tr>
<tr>
<td>Gender (M:F)</td>
<td>7:8</td>
<td>8:7</td>
<td>0.73</td>
</tr>
<tr>
<td>Higher degree (Yes:No)</td>
<td>2:13</td>
<td>3:12</td>
<td>0.52</td>
</tr>
<tr>
<td>Previous AMH training (Yes:No)</td>
<td>0:15</td>
<td>2:13</td>
<td>0.15</td>
</tr>
<tr>
<td>Number of clinical AMHs involved in between questionnaires</td>
<td>3</td>
<td>1</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Table 1. Participant demographics and Adult Major Haemorrhage (AMH) experience.

*Independent t-test. IQR, Interquartile Range.

Conclusions

AMH is a significant cause of morbidity and mortality. This study has shown that high-fidelity one-day simulation training increases both the knowledge of and confidence in using the OUH NHS Trust’s AMH protocol amongst FY1 doctors. Further studies are required to assess whether this benefit is seen amongst more senior trainees and also to determine whether the results translate into clinical practice by improving patient safety.

Feedback from the intervention group stated that simulation training is an effective method of teaching AMH management, and that the current AMH protocol is clear and easy to follow. However they highlighted that insufficient time is dedicated to major haemorrhage during FY1 teaching and that it should be incorporated into either induction or mandatory weekly teaching.

Acknowledgements

The authors would like to thank the following members of the multidisciplinary team, without whom the above study would not have occurred:

Clinical team
Dr Vassilis Athanassoglou (Anaesthetic Registrar)

Laboratory and research team
Julie Staves (Transfusion Laboratory Manager); Sally Beer (Research Nurse); Simon Noel (Blood Safety and Conservation); Edward Fraser (Blood Safety and Conservation)

OxStaR team
Dr Helen Higham (OxStaR Centre Director); Rosemary Warren (OxStaR Centre Manager); Alan Inglis (OxStaR Senior Simulation Technician); Charles McDermott (OxStaR Simulation Technician); Russell Sinclair (OxStaR Simulation Technician)

References