

Sedation for interhospital transfer of the paralysed patient

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Background

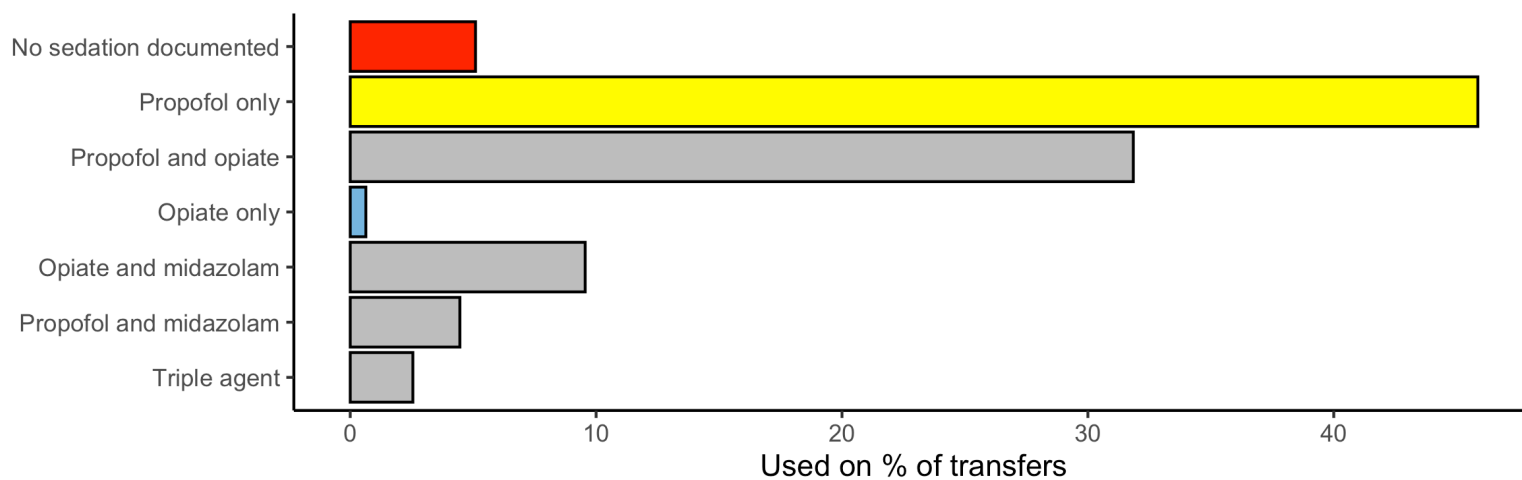
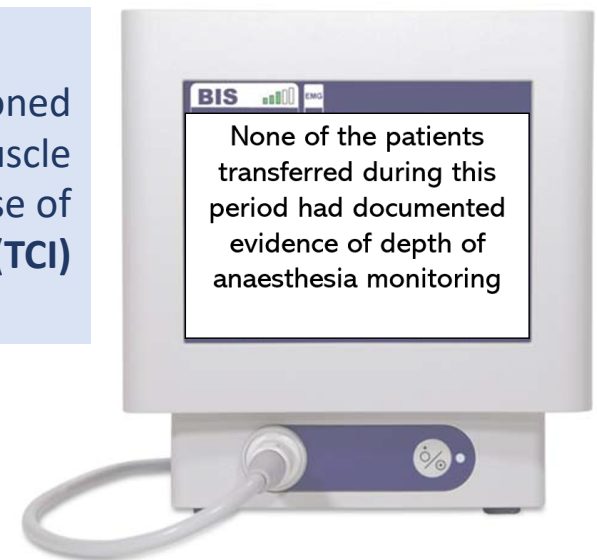
Interhospital transfer of patients within the EMCCN often involves intubation, maintenance of anaesthesia with intravenous agents (TIVA), and paralysis using neuromuscular blockade (NMB). NAP5 reported that risk factors for accidental awareness under general anaesthesia (AAGA) include elements common to interhospital transfer locally (TIVA, NMB, critical illness, cardiac patients), and identified 3 cases of AAGA during transfer.

Methods

We reviewed transfer documentation for all mechanically ventilated patients undergoing interhospital transfer between October 2017 and February 2019 (before inclusion of University Hospitals of Leicester). Use of NMB was determined or presumed by the authors, and dose of anaesthetic agents and vasopressors used during transfer recorded.

Results

225 transfers of mechanically ventilated patients were performed. 157 explicitly mentioned the use of muscle relaxation and a further 33 were thought to be highly likely to use muscle relaxation based on author review (considering type of case, time since intubation, and use of mandatory ventilation modes). **No transfers utilised either target-controlled infusion (TCI) sedation or depth of anaesthesia (DOA) monitoring.**



VASOPRESSORS

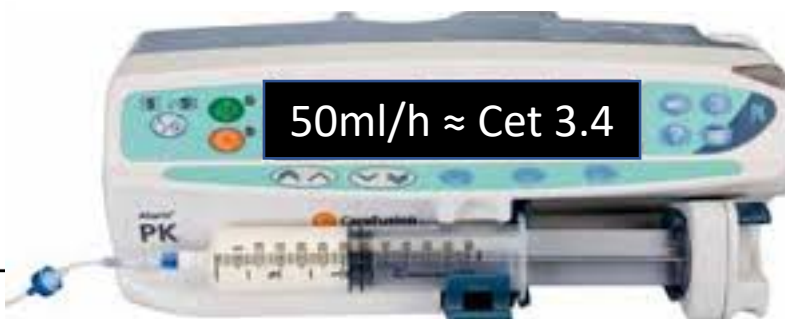
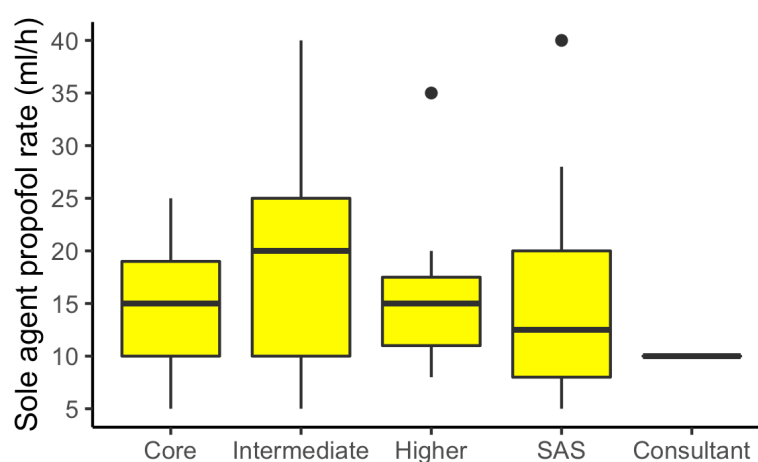
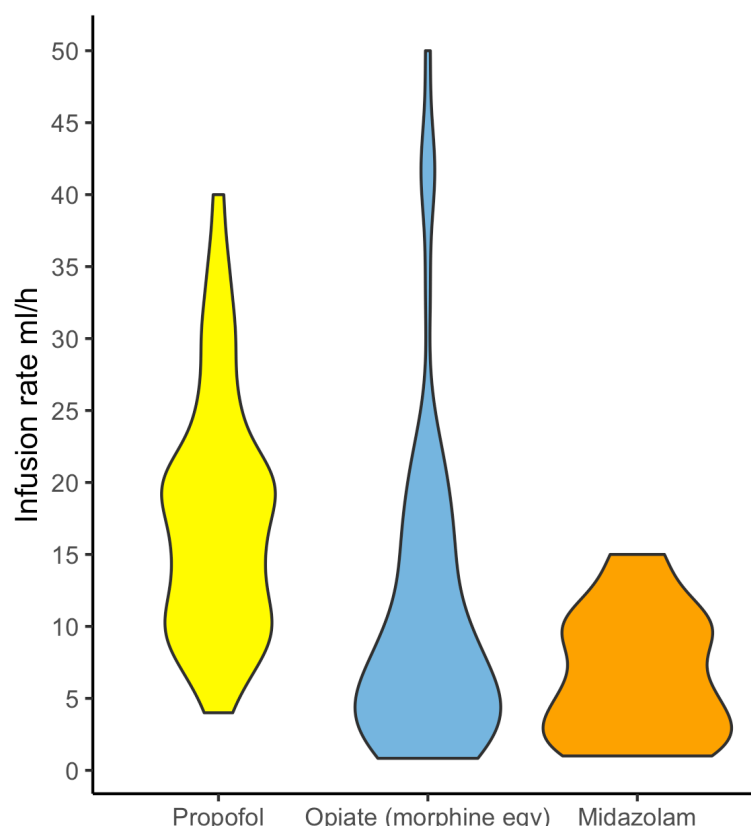
Used on 66 (35%) of transfers

SINGLE AGENT PROPOFOL

Most common sedation (46%)

ALFENTANIL

Most common opiate (33%)



There was **no sedation regime documented during 8 transfers** (4%), 7 of which (88%) explicitly documented a dose of NMB.

All propofol-only doses would have resulted in an effect-site concentration **below 3.4 ng/ml** in a 70kg middle-aged man (**50% loss of consciousness**).

No significant difference was seen in sedation regimes between grades of anaesthetist or transferring centres.

Conclusions and recommendations

Adequate depth of sedation is required during transfer to mitigate a high risk of inadvertent awareness. Accurate documentation of sedation during and around transfer is therefore essential to defend against claims of AAGA.

Our results suggest many patients may be significantly under sedated. The use of vasopressors during transfer was also lower than we expected in a critically ill population. More frequent use of vasopressors may be required to achieve adequate sedation.

Standardisation of infusion doses, and protocolisation of sedation, vasopressor, and muscle relaxation regimes, may improve practice. Provision of infusion pumps capable of delivering TCI – and considering the availability of continuous DOA monitoring – on the transfer trolley may reduce the risk of inadequate dosing of anaesthetic agents.