Pre-Diluted Phenylephrine in Obstetrics

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Introduction

- Current practice in departments throughout the UK is to use a phenylephrine infusion to attenuate the haemodynamic effects of spinal anaesthesia for caesarean-section.
- In Forth Valley Royal Hospital (FVRH) current practice is to use phenylephrine at a concentration of 100mcg/ml.
- This is prepared each morning by anaesthetic assistants from 10mg/ml vials, and subsequently checked by the on-call obstetric anaesthetist. A preparation from Aguettant Ltd which is pre-diluted to 100mcg/ml could be used in place of our current method.

Objectives:
To quantify a cost difference between drug preparations and to ascertain any drawbacks or benefits anaesthetist feel there are to using pre-prepared drugs.

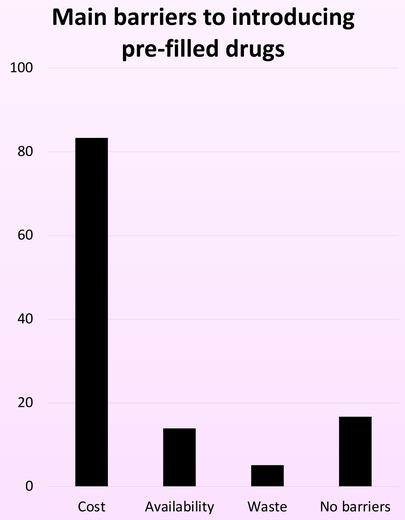
Methods

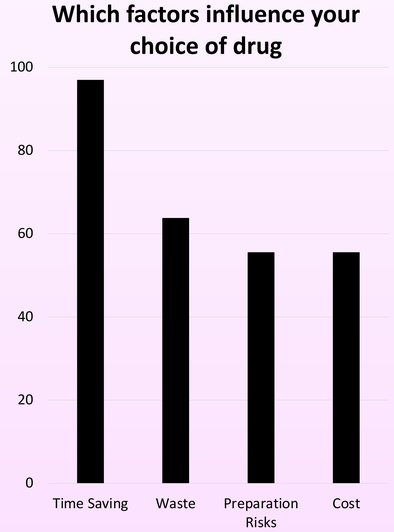
- A questionnaire was sent to the anaesthetic department at FVRH which explored views on pre-prepared drugs including positives, negatives and potential barriers.
- This returned a 60% response rate. 58% of these were consultants.
- A cost comparison was made between each preparation, taking into account each piece of equipment used.
- The costs calculated were based on 403 caesarean sections performed under spinal anaesthesia from June to December 2021.

Results

- 97% feel pre-prepared drugs save time during emergency cases and are less likely to cause drug errors.
- One respondent was involved in a drug error which could have been avoided by use of a pre-prepared drug.
- 56% of respondents prefer to use pre-prepared drugs where possible.
- The main barrier to using pre-prepared drugs was felt to be cost (83%).
- The estimated weekly cost for our current practice was £45.23.
- The estimated weekly cost based on Aguettant's preparation was £64.61 (43% increase).







Discussion

- Pre-prepared drugs have safety benefits and their use is currently recommended by The Association of Anaesthetists as a potential way to reduce drug errors [1].
- Risks avoided include concentration and labelling errors, inconsistent drug concentration throughout the preparation and microbial contamination [2],[3].
- The cost increase was acceptable following recent departmental cost reducing interventions.
- There was also a considerable decrease in packaging waste and less disposal of unused drug.
- The pre-diluted option had more recyclable glass waste.
- Although the safety benefits were not quantifiable, drug errors were a common theme in local significant event analyses.

References
[1] D. Whittaker. Standardisation, syringe labelling and prefilled syringes. Anaesthesia 2021 403: 12-13
[2] S. M. Yentis, K. Randall. Drug errors in Obstetric Anaesthesia: A national survey. International Journal of Obstetric Anaesthesia. 2003 12: 246-249
[3] A. Simpson. Shaken Not Stirred. Anaesthesia 2015 70: 228-228