

# Local Anaesthetic Toxicity Awareness In The Southern General Hospital Labour Suite

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## Introduction

Well-placed local anaesthetics (LA) can yield great clinical benefits. Local anaesthetic systemic toxicity (LAST) causes rare but life threatening complications. The Royal College of Anaesthetists 3<sup>rd</sup> National audit project (NAP3) identified 6 cases of inadvertent intravenous LA injections in the obstetric setting.<sup>1</sup>

One highly publicised case in 2004 was of Mayra Cabrera, a theatre nurse who, after delivery of her baby, had a fatal intravenous LA injection when her epidural infusion of bupivacaine was mistakenly connected to her i.v. line.<sup>2</sup>

The result of this was numerous safety alerts including a National Patient Safety Alert on safer practice with epidural injections and infusions which states, "Ensure all staff... have adequate training... on how to manage toxicity and use resuscitation protocol wherever bupivacaine is administered."<sup>3</sup>

## Aim

There is wide use of LA in the Southern General Hospital obstetric unit.

The purpose of this study was to assess the knowledge of staff working in labour ward, in order to highlight areas requiring development to improve patient safety.

Topics covered included knowledge of LA, recognition of LA toxicity and the initial and definitive management of LA toxicity.

## Method

A questionnaire was utilised to perform anonymous prospective data collection. 45 members of staff were surveyed including midwives, obstetricians, ODPs and anaesthetic staff.

Staff were allowed unlimited time to complete the questionnaire but were observed to prevent conferring with colleagues or referring to literature.

Questions in the survey included:-

- How much local anaesthetic is in the following concentrations?  
1% Lidocaine, 0.25% Levobupivacaine, 0.5% Levobupivacaine
- What are the recommended maximum safe doses of?  
Lidocaine, Lidocaine with Adrenaline, Levobupivacaine
- What are the signs of local anaesthetic toxicity?
- If you suspect local anaesthetic toxicity what is the very first thing you must do?
- List five other aspects of the initial immediate management:
- What is the definitive treatment local anaesthetic toxicity?
- Where is the location of this antidote in the labour ward?

The remaining questions were for anaesthetists only and covered knowledge of Intralipid® administration, including the loading (bolus) dose, the maintenance doses, subsequent bolus doses and the maximum cumulative dose.

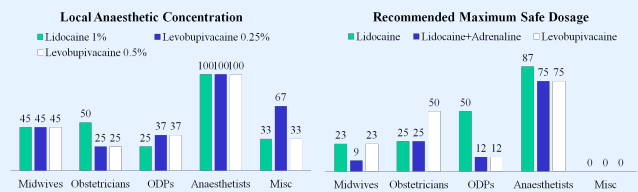
## References

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## Results

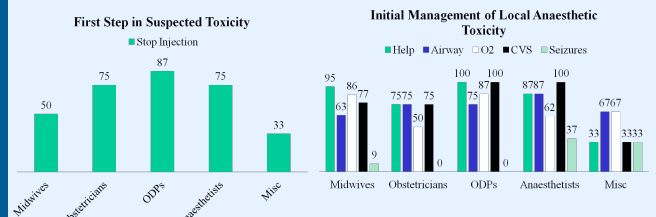
45 surveys in total were completed

Midwives = 22, Obstetrics = 04, ODP = 08, Anaesthetists = 08, Misc = 03



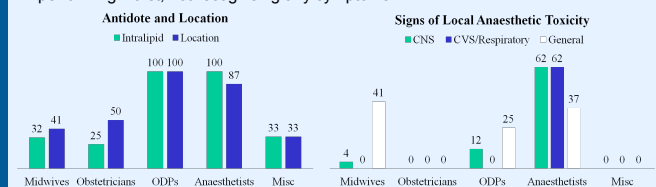
### Positive points:-

- Midwives and obstetricians performed well in the initial management of LA toxicity.
- ODPs were familiar with the initial management of LA toxicity and furthermore knew intralipid was the antidote for LA toxicity and its location in labour ward.
- Anaesthetists showed a good knowledge of LA drug concentrations and toxic doses.



### Negative points:-

- Knowledge of LA concentration and toxic doses of LA was limited among midwives and obstetricians.
- Most Midwives and obstetricians also did not recognise that intralipid® is the antidote and its location on labour ward.
- Recognition of the signs of LA toxicity was poor in all groups with obstetricians performing worst, not recognising any symptoms.



## Conclusion

There was varying awareness of LA toxicity and it was highlighted that all staff groups could improve their knowledge base in certain areas.

In particular however everybody could benefit with increasing their knowledge of signs of LA toxicity.

The advent of information posters displayed in prominent areas will hopefully improve knowledge and patient safety in the future.

