Forearm NIBP vs arterial line measurement in morbidly obese patients

Dr. Michael Shaw
Specialist Anaesthetist
Department of Anaesthesia
Ballarat Base and St John of God Hospital Ballarat

RACS ANNUAL SCIENTIFIC CONGRESS AND ANZCA ANNUAL SCIENTIFIC MEETING
Sands Expo and Convention Center, Marina Bay Sands, Singapore
May 5-9, 2014
INTRODUCTION

• A morbidly obese 43 year old lady with a BMI of 46 with controlled hypertension, presents for a hysteroscopy D&C for post menopausal bleeding.
• Arterial NIBP can be risky and difficult to perform in morbidly obese patients
• NIBP is problematic as most commercial cuffs do not fit the morbidly obese upper arm
• Forearm NIBP usually allows a fit of the cuff similar to a non obese upper arm
Methods

• Local ethics committee approval
• 50 patients, BMI over 35
• Elective surgery
• Art line and forearm NIBP, 5 minutely measurements
• Data collected real time (GE S/5 collect)
• Statistical analysis using “R”.

Sands Expo and Convention Center, Marina Bay Sands, Singapore
May 5-9, 2014
RESULTS

- 50 Patients, 816 data points
- Mean age 50.6 years (female 35, male 15)
- Mean BMI 44.9 (35-61)
- TOST NIBP v’ s Arterial line (equivalence)
  - Systolic tolerance 10mmHg (p=0.05)
  - Mean 5mmHg
  - Diastolic 5mmHg
- Relationship consistent across range of BMI
RESULTS

Systolic Blood Pressure

Diastolic Blood Pressure

Mean Blood Pressure
CONCLUSION

- Forearm noninvasive BP cuff usually fits well in obese patients.
- Within clinically relevant limits there is good agreement between Arterial line and NIBP readings.
- Where arterial line monitoring is not required for other clinical reasons, forearm NIBP monitoring is reliable in obese patients.
- Acknowledgements..