

The incidence of a single-shot local anesthetic overdose is more prevalent in females than in males, irrespective of BMI

Kamonchanok Tengwongderm¹, Jean Louis Horn¹, Ban Tsui^{1, 2}

1 School of Medicine, The Chinese University of Hong Kong - Shenzhen, Shenzhen, China

2 Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University, School of Medicine, Stanford, USA

INTRODUCTION

Peripheral Nerve Blocks in Modern Anesthesia

- Peripheral nerve blocks are crucial in modern anesthesia for pain relief.
- Advancements in local anesthetic techniques, like high-volume fascial plane blocks and continuous catheters, increase risk of local anesthetic systemic toxicity (LAST).
- Risk factors include LA dose, vascularity, age, sex, muscle mass, and organ failure.
- Traditional dosing relies on total body weight (TBW), but recent literature suggests lean body weight (LBW) for accurate dosing.
- Study compares LBW-based and TBW-based ropivacaine doses, focusing on gender, age, and BMI.

METHODS

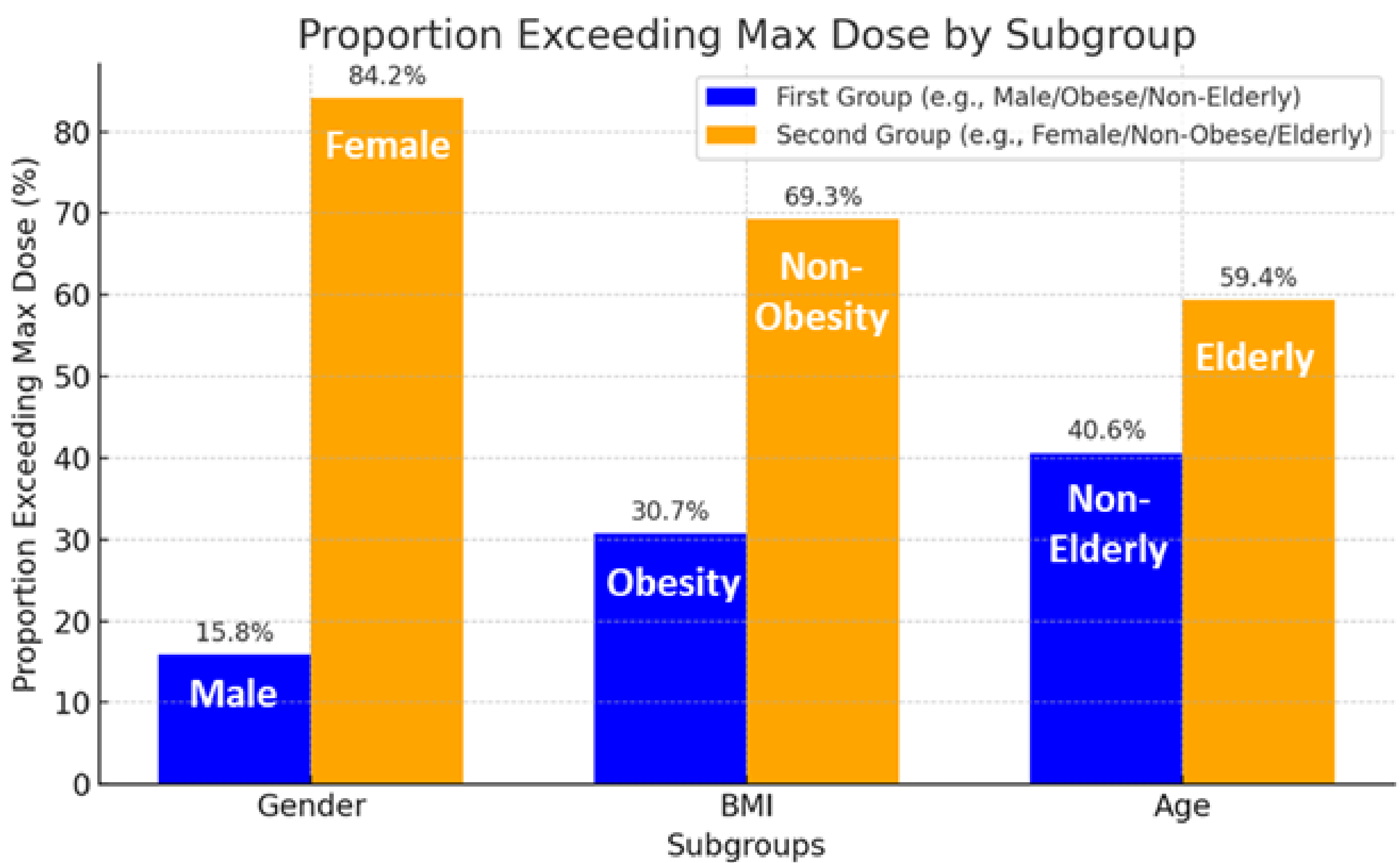
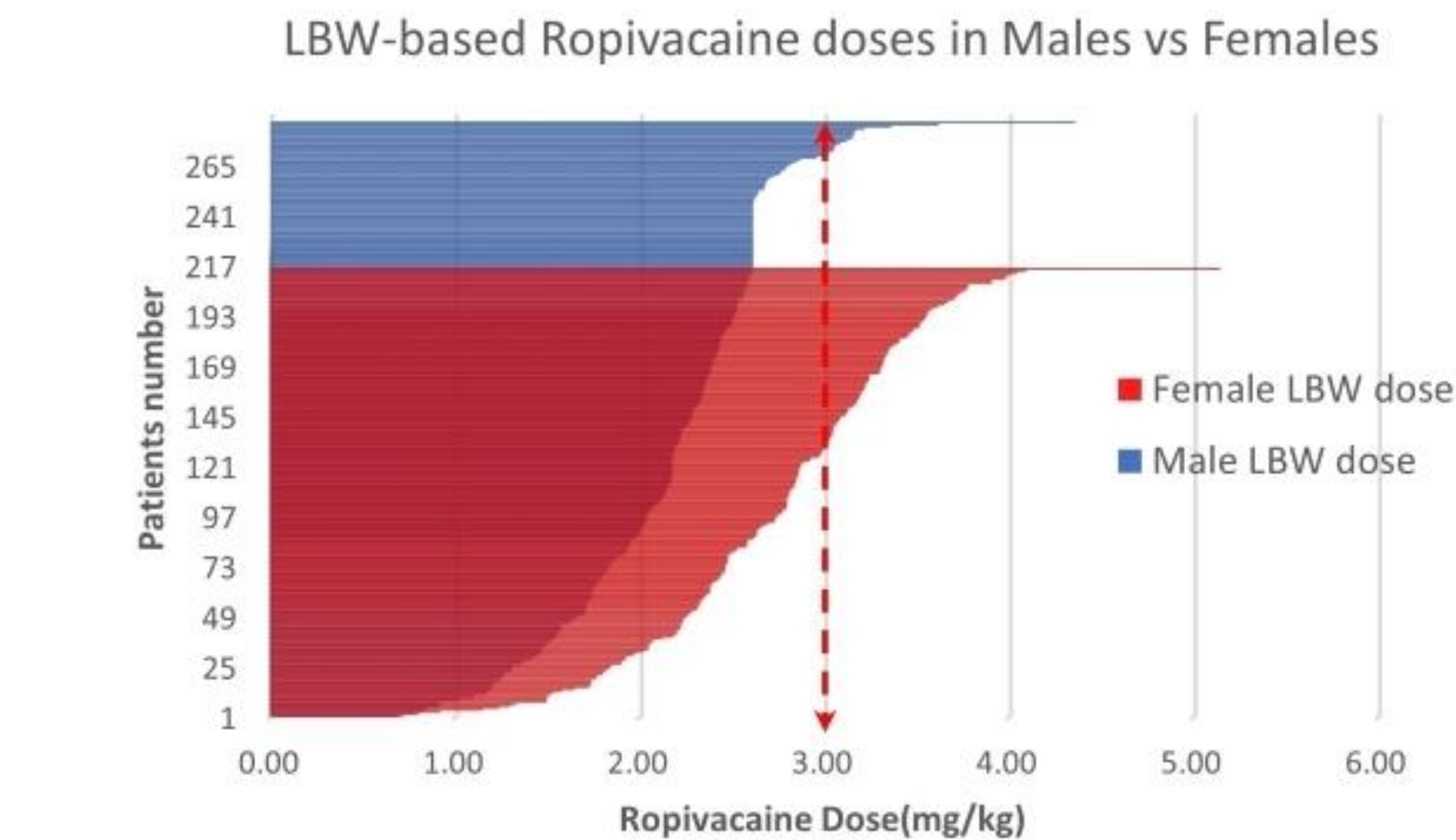
Retrospective Analysis of Single-Shot Peripheral Nerve Blocks

- 500 patients analyzed (December 2023–July 2024).
- Data included demographics, block types, LA used, LAST incidents.
- LBW calculated using Boer equation.
- Statistical analyses included t-tests and Mann–Whitney U tests.

RESULTS

500 Patients Received Ropivacaine as Local Anesthetic

- LBW-based doses were higher than TBW-based doses.
- 20.2% of patients exceeded LBW-based maximum dose.
- No overt LAST cases reported.



DISCUSSION & CONCLUSION

Females and Elderly Patients' LBW-Based Dose Excess

- Females received higher LBW-based doses than males, with 39.53% exceeding the maximum dose.
- Elderly patients (≥ 65 years) were more likely to exceed dosage thresholds, with 56.5% exceeding the reduced threshold of 2.4 mg/kg.
- Non-obese patients were more likely to exceed the limit (69.31%) than obese patients (30.69%), with higher LBW-based doses.
- A low negative correlation ($r = -0.11$) between BMI and LBW-based doses.

Balancing Weight-Based Formulas for Overdose Risks

- Essential to balance formulas with considerations.
- Procedural efficacy crucial but may increase overdose risk in vulnerable populations.
- Emphasizes need for careful dosing strategies.

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