Lignocaine Safety During Wide Awake Surgery (WALANT) of Radius Plating.

Tokiran MF; Shalimar Abdullah; Jamari Sapuan; Amir Adham; Suzana Makpol
Hand and Microsurgery Unit, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.

INTRODUCTION:

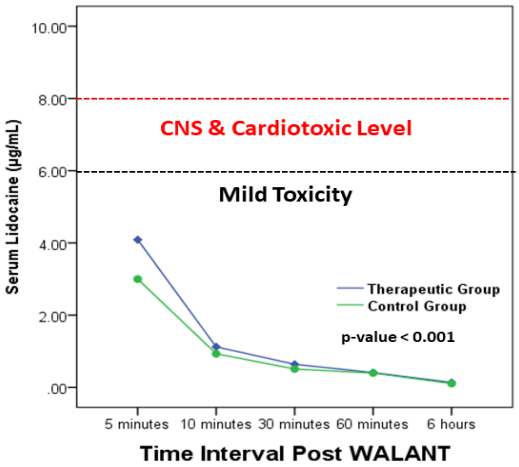
The goal of this study is to evaluate the safety profile of WALANT, involving twenty-four participants with radius fractures, 19 of whom were in the therapeutic group who underwent radius plating surgery under WALANT within the safe recommended dose according to their body weight, in which we monitored them for any occurrence of clinical signs and symptoms of toxicity, with the goal of proving that surgery under WALANT is safe clinically and biochemically.

METHODS:

Twenty-four participants with radius fracture for radius plating were recruited between July 2019 to April 2021, randomized into therapeutic group with total of 19 subjects (1% lignocaine in 1:100000 adrenaline) and 5 subjects in control group (2% lignocaine alone). Clinical and biochemical data were gathered intra- and post-operatively to evaluate and monitor signs and symptoms of lignocaine toxicity. Capillary refilling time (CRT) of fingers, the presence of skin necrosis, and the duration of recovery of sensibility were all used to assess the clinical situation. Biochemically, serum lignocaine (in µg/mL) was tested at different intervals using a high-pressure liquid chromatography (HPLC) reagent.

RESULTS:

The results showed that there was no clinical evidence of skin necrosis in the therapeutic group, and they had a longer mean (± SD) and median (IQR) time for the recovery of sensation than the control group ($p < 0.001$), with no signs or symptoms of lignocaine toxicity. Biochemically, there was a significant difference in serum lignocaine levels between the therapeutic and control groups post WALANT procedure ($p< 0.001$), with all samples for both groups were below toxicity level.



DISCUSSIONS:

Lignocaine toxicity can manifest in a variety of ways, from mild to life-threatening. They usually occur between 1 and 5 minutes after administration, but clinical toxicity might take up to 30 minutes or longer. The therapeutic level of lignocaine in serum plasma is between 1.50 µg/mL to 5.50 µg/mL[1]. Mild toxicity can occur at a concentration of 6.00 µg/mL, up to central nervous system (CNS) toxicity and cardiotoxicity at concentrations of 8.00 µg/mL[2]. Hence, it is at utmost important to make sure lignocaine given in WALANT is within therapeutic dose and level.

CONCLUSION:

WALANT during radius plating procedure is clinically and biochemically safe, with no lignocaine toxicity if lignocaine is given within the safe recommended dose and safe to use in extremity surgeries as long as all precautions are followed.

REFERENCES:

1. World Journal of Anesthesiology.
2. Foldes FF, Molloy R, McNall PG, JAMA 1960; 172:1493-1498.