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Wide Awake Local Anesthesia No Tourniquet (WALANT) Is More Effective at Decreasing Pain Compared to Distal Nerve Block With a Tourniquet During Carpal Tunnel Release Surgery: A Systematic Review and Pooled Analysis

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Virtua Health College of Medicine & Life Sciences of Rowan University

Objectives

- To compare the intraoperative pain of the Wide Awake Local Anesthesia No Tourniquet (WALANT) approach to using a distal nerve block (3.75 mg/ml Ropivacaine) with a tourniquet (DNBWT) during carpal tunnel release (CTR) surgery.
- To determine whether WALANT or using a distal nerve block with a tourniquet yields lower pain during CTR.

Methods

- A systematic review and meta-analysis were conducted following the 2020 PRISMA guidelines.
- Five online databases (Cochrane, Embase, PubMed, Web Of Science, Scopus) were screened.
- Included studies were those that measured the pain of patients preoperatively, and intraoperatively using the visual analogue scale (VAS) or the numeric rating scale (NRS) on patients undergoing CTR with either the WALANT technique or a DNBWT.
- 2 randomized controlled trials (RCT) fit our inclusion criteria and were included in the final analysis, yielding 90 distinct patient evaluations.



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• Our results portray that WALANT has stronger clinically significant effects (Cohen's d = 1.03, 95% CI 0.59-1.47) in reducing intraoperative pain during CTR, compared to using a DNBWT.



Figure 1. Forest plot portraying the effect size of comparing distal nerve block with a tourniquet (control group) to the WALANT approach (treatment group)

Effect size of Estimated ov Estimated ov	^r each study erall effect size erall confidence in	terval	Co	onfidend verall ef	ce interval fect size v	of effect alue	size
ID	Cohen's d Std.	Error	Lower	Upper	p-value	Weight	Weight (%)
Doirado et al.	1.13	0.39	0.36	1.90	0.00	6.47	32.57
Bloc et al.	0.98	0.27	0.44	1.52	0.00	13.39	67.43
Overall	1.03	0.22	0.59	1.47	0.00		
Model: Random-ef Heterogeneity: Tau Homogeneity: Q =	fects model I-squared = 0.00, H- 0.10, df = 1, p-value	square = 0.76	d = 1.00	, I-squa	red = 0.00		
Figure 2.	The data obt	ained	from	the f	forest p	lot ana	alysis.

Discussion

- The WALANT technique utilizes a distal nerve block (typically block, typically only utilizes Ropivacaine with a tourniquet.
- difference in pain may be due to the absence of a tight, uncomfortable tourniquet, and the utilization of Lidocaine with Epinephrine.

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Results

Ropivacaine), in conjunction with Lidocaine and Epinephrine, but does not use a tourniquet. The more common approach of only using a distal nerve • Our analysis portrays that the WALANT technique yields lower patient pain than the typical distal nerve block with a tourniquet during CTR. This

- United States¹.

Study Limitations

- compared to a DNBWT.
- of drugs.

("WALANT" OR "Wide Awake Local Anesthesia No Tourniquet") AND ("Carpal Tunnel Release" OR "Carpal Tunnel Syndrome") AND ("Randomized")

Tulipan JE, Ilyas AM. Carpal Tunnel Syndrome Surgery: What You Should Know. Plast Reconstr Surg Glob Open. 2020;8(3):e2692. Published 2020 Mar 20. doi:10.1097/GOX.000000000002692 2. Bloc S, Squara P, Quemeneur C, et al. Wide Awake Local Anesthesia No Tourniquet (WALANT) technique improves the efficiency of

Conclusion

• CTR is one of the most common upper

extremity procedures, reaching

400,000-600,000 yearly procedures in the

• WALANT may be a promising technique in

reducing intraoperative pain during CTR.

• The strong effect size of Cohen's d = 1.03

portrays the technique's reduction on patient intraoperative VAS/NRS scores.

• With a sample size of 90 patients, it is difficult to truly determine the effectiveness the WALANT

technique has on pain reduction during CTR

• Although the concentrations of Ropivacaine,

Lidocaine, and Epinephrine were similar between the studies, they were not identical.

• Future homogenous RCTs are needed in order to expand the sample size, and control for the strengths

Search String

References

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