Does the pain experienced during therapeutic spinal injections relate to patient outcome?

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AIM- To compare pain experienced and outcome in patients receiving nerve root block and transforaminal epidural injections for radicular leg pain. We also looked at other outcome factors such as patients receiving surgery and overall efficacy.

STUDY DESIGN- Retrospective study

BACKGROUND- Radicular leg pain is one of the most common and debilitating symptoms resulting from nerve root involvement in spinal pathologies (1). Nerve root and transforaminal epidural injections can be highly effective in treating this type of pain. They work by decreasing inflammatory markers and stretching the nerve roots to cause potential neurolysis resulting in pain relieving effects. A previous study has shown provocation of concordant radicular pain did not predict outcome of injection at short term follow up (2), so we aimed to see if our research was consistent with this.

METHODS- Patients who had received spinal nerve root blocks or foraminal epidurals between 13/7/18 and 01/12/21 for radicular leg pain were used. Pain provocation at time of injection was recorded (categorised as none, weak , moderate and strong), alongside age and diagnosis. Six-week follow up data on the system was analysed to determine outcome, and whether patients were listed for or received surgery. Post injection questionnaires were also sent to all 249 patients.

RESULTS- : A total of 167 patients had a complete data set for analysis (57.2%). Outcome was divided into three categories, "*did not work*", "*worked and wore off*" and "*worked*". Pain provocation/ pain experienced at the time of the injection was recorded by 4 categories "none", "weak", "moderate" and "strong". The numbers of patients in each group were recorded and correlated to outcome.
There was no significant correlation found between the pain provocation groups and their subsequent outcomes (p=0.994). Pain provocation related to whether or not a patient received surgery following injection was not shown to be significant (p=0.68). Furthermore, there was no significant difference between age and pain experienced during injection (p=0.193). There was also no significance of pain relief at the time of the injection and outcome found (p=0.477). The number of people requiring surgery following injection was lower than those who did not (50 compared to 116 patients).

		Outcome (% of outcome)			
		Did not work	Worked and wore off	Worked	Total
Pain Provocation	None	1 (3.6%)	1 (1.4%)	1 (1.4%)	3 (1.8%)
	Weak	4 (14.3%)	9 (13.0%)	10 (14.3%)	23 (13.8%)
	Moderate	13 (46.4%)	34 (49.3%)	35 (50.0%)	82 (49.1%)
	Strong	10 (35.7%)	25 (36.2%)	24 (34.3%)	59 (35.3%)
	Total	28	69	70	167

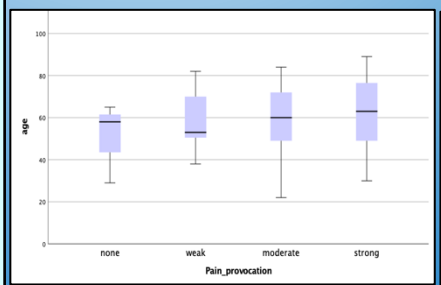

Figure 1: age vs pain provocation

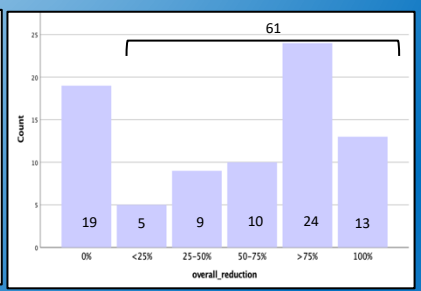

Figure 2: Number of patients with different reductions in pain

DISCUSSION- The results we found were in line with the previously published literature regarding the question of the significance of pain experienced during injection and outcome (2), however we plan to revisit this study in a year to further look into this question.

CONCLUSION- The most important question of this study was answered, there was no significant link found between the pain experienced during spinal injections and the subsequent patient outcomes.

References
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2. McCormick Z, Margolis S, Temme K, Rivers E, Cameron SA, Smith MC, et al. Concordant pain provocation during transforaminal epidural steroid injection for lumbosacral radiculopathy: effect on pain outcome and predictive factors. Pain Physician. 2015;18(1):E19-26.