COOLED VERSUS CONVENTIONAL RADIOFREQUENCY FOR SACROILIAC JOINT DENERVATION: RETROSPECTIVE STUDY WITH 24 MONTHS FOLLOW UP

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INTRODUCTION

Radiofrequency (RF) denervation of S1,S2,S3 and L5 dorsal Ramus has been showed to be effective in reducing pain from sacroiliac joint (SIJ). Cooled RF is a novel modality of RF which works at lower tip temperature creating bigger lesions compared with conventional RF. We compared a single probe conventional RF (CRF) (img.1) with Cooled RF (img.2) device for SIJ denervation. No study has ever compared this devices for more than 12 months follow up.

MATERIALS AND METHODS

Retrospective study including 43 consecutive patients: 21 treated with CRF (Group A) and 22 with Cooled RF (Group B). Follow up at 1-6-12-24 months analyzing pain score (NRS) and Oswestry Disability Index. Patients had severe pain (mean basal NRS >7) resistant to conventional treatment. The two groups showed no significant differences regarding age, sex, weight, duration of pain, medication use. Ethical Committee approval was obtained.

Img.1: CRF Probe positioning between SIJ and sacral foramens

Img.2: Cooled RF Probe positioning and lesioning technique around sacral foramens

RESULTS

Successful outcome (pain relief > 50%) was achieved in > 90% of all patients without differences between the two groups at 1 month. Even if both groups showed significantly lower pain and disability scores at all follow ups compared to baseline, Cooled RF showed a longer pain relief (fig.1 and 2) compared with CRF at all follow ups both for pain and disability. At 24 months 41% of patients treated with Cooled RF had a successful outcome compared to 19% of patients treated with CRF

	NRS			OSWESTRY		
	Group A (CRF)	Group B (Cooled RF)	p value	Group A (CRF)	Group B (Cooled RF)	p value
Basal	7,6	7,6	0,97	48,5	53,9	0,17
1 Month	1,5	0,9	0,16	13,1	15,8	0,23
6 Months	4,3	2,7	<0.01	20,7	29,3	0,01
12 Months	5,1	3,5	<0.01	22,4	32,6	<0.01
24 Months	5,8	4,6	0.01	38,6	29,7	<0.01

Fig.1: NRS and Oswestry scores in the two groups at different follow-up

Fig.2: Percentage of patients with successful outcome at different follow up in the two groups

CONCLUSIONS

Both devices are effective in treating SIJ pain in the short term in the majority of patients. Cooled RF produces significantly longer pain relief which persists 24 months after procedure. SIJ has a complex and variable innervation. Cooled RF allows to create more accurate lesioning of the target nerves, which could explain the longer pain relief.