APPENDIX 3

TABLE 1. COMPARISON OF THE KEY FINDINGS ON EFFICACY OF ESWT IN TREATMENT OF CRCT

Reference	***Intervention***	***Outcome measures***	***Results***	***Conclusions***
Albert et al (2007)	Group 1 – high energy ESWT – 2500 impulses 14 days apart, up to 0.45 mJ/mm^2 Group 2 – low energy ESWT – 2500 impulses 14 days apart, up to 0.06 mJ/mm^2	• Constant & Murley score • Pain relief assessed by VAS score • Resorption of calcific deposits assessed on radiographs	• Improvement in shoulder function in the Group 1 • Pain relief was more marked in the Group 1 but did not reach statistical significance • Calcific deposits remained unchanged in size for the majority of patients	High energy ESWT is effective treatment for chronic calcifying tendonitis of the rotator cuff.
Krasny et al (2005)	Group 1 – ultrasound-guided needling followed by high energy ESWT 2500 impulses with energy flux density of 0.36 mJ/mm^2 Group 2 – high energy ESWT only	• Constant & Murley score • Pain relief assessed by VAS score • Calcific deposits resorption assessed on radiographs	• Overall improvement in the Constant score – 67.5%, unchanged score – 32.5% • Improvement in the Constant score was markedly higher in Group 1 • Overall elimination of calcific deposits – 46.3%, partial disintegration – 30.0%, radiologically unchanged – 23.7% • Significantly better disintegration of calcific deposits in Group 1 • Subsequent to treatment 32.5% of patients required arthroscopic removal of	Ultrasound-guided needling in a combination with shock-wave therapy is more effective than shock-wave therapy alone in patients with symptomatic calcific tendonitis.

			calcific deposits	
Pleiner et al (2004)	Group 1 – 31 shoulders were treated at the area of maximum pain with application of 2x2000 impulses of 0.28 mJ/mm^2 at the interval of 2 weeks Group 2 – 26 shoulders were treated with 2x2000 impulses < 0.07 mJ/mm^2 at an interval of 2 weeks	• Constant score • Pain relief • Radiological assessment of calcific deposits	• Improvement in the Constant score was significantly higher in Group 1. • Significant improvement in pain in Group 1 at the 1-week follow up, however at the 3-month and 7-month follow up assessments no difference in pain could be detected. • Seven months post-treatment calcific deposits resolved completely in 19% in the Group 1 and 8% in the Group 2	ESWT with an energy flux density of 0.28 mJ/mm^2 achieved significantly greater improvement in shoulder function and slightly higher but not significant disintegration of calcific deposits. However it did not result in pain relief.
Cosentino et al (2004)	All patients had four treatments (one every 4-7 days), each consisting of 1200 shocks with a frequency 120 shocks per minute. The energy flux density started at 0.03 mJ/mm^2, gradually increasing to 0.28	• Constant and Murley score at baseline, after the treatment, and at 3 and 6 month follow up • Radiological assessment of calcific deposits	• Significant improvement in shoulder function • Significant pain relief • At 1 month after the treatment partial resorption of calcific deposits was observed in 44.5% of patients, complete resorption in 22.3% and no response was recorded in 33.2% of patients	Good tolerance and safety of the treatment, good clinical-radiological response.

	mJ/mm^2			
Peters et el (2004)	Group 1 – received weekly shocks with the number of pulses per session 1500, with energy flux density 0.15 mJ/mm^2 Group 2 – received weekly treatment with the number of pulses per session 1500with energy flux density 0.44 mJ/mm^2 Group 3 – sham treatment	• Pain during ESWT • Haematoma secondary to ESWT • Resorption of calcific deposits • Recurrence of pain	• Pain during ESWT – significantly more intense in the Group 2 • Haematoma – 6% in the Group 1; 19% in the Group 2 • Residual calcifications at a 6 month follow up – 100% in the Group 1; no calcifications in the Group 2 • Recurrence of pain at 6 month – 87% in the Group 1; none in the Group 2	High-energy ESWT is very effective in treatment of calcific tendonitis of the shoulder.
Sabeti-Aschraf et al (2005)	Group 1 – at weekly intervals received 3 sessions of low-energy shocks, 1000 impulses of 0.08 mJ/mm^2 at the point of maximum tenderness identified by palpation	• Constant and Murley score • Pain relief assessed by VAS • Resorption of calcific deposits	• Both groups showed significant improvement in shoulder function and pain relief. • VAS at 12 weeks improved: Group 1 – from 68.36 to 33.36 Group 2 – from 65.96 to 18.21 • Constant and Murley score improved at 12 weeks Group 1 – by 17.36 points Group 2 – by 30.08 points • Complications or severe side effects were not recorded	Three-dimensional, computer-assisted navigation achieved significantly better results than ESWT focused on the point of maximum tenderness as identified by palpation.

	Group 2 - at weekly intervals received 3 sessions of low-energy shocks, 1000 impulses of 0.08 mJ/mm^2 with the shock wave focused on calcium deposits as identified on a 3-dimentional computer-assisted navigation device			

TABLE 2. COMPARISON OF OUTCOME MEASURES FOR CRCT

Study	***Quality of study***	***Efficacy***					
		Pain reduction score (VAS mean % change)		Shoulder function Constant & Murley score (mean group point change >25 points)		Calcific lesion complete resolution (% in each group)	
		Treatment group	Control/sham group	Treatment group	Control/sham group	Treatment group	Control/sham group
Albert et al 2007	1-	?	?	At 3 months No (12.5)	At 3 months No (4.5)	At 3 months in 15%	At 3 months in 5%
Krasny et al 2005	1-	Grp1: at 4 months ? Grp2 at 4 months ?	No control group	Grp1: at 4 months Yes (30.5); Grp2: At 4 months No (23.1)	No control group	Grp1: At 4 months in 60%; Grp2:at 4 months in 32.5%	No control group
Pleiner et al 2004	1-	?	?	At 7 months ?	At 7 months ?	At 7 months in 19%	At 7 months in 8%
Cosentino et al 2004	2+	?	No control group	At 3 months Yes (31.5)	No control group	At 1 month in 22.3%	No control group
Peters et al 2004	1	Grp1: at 6 months ?; Grp2: At 6 months ?	Grp1: At 6 months ?; Grp2: At 6 months ?	Constant and Murley score not assessed	Constant and Murley score not assessed	Grp1: At 6 months in ?%; Grp2:At 6 months in ?%	At 6 months in 0%

Sabeti-Aschraf et al 2005	1-	Grp1: At 3 months Yes (51%); Grp2:At 3 months Yes (72%)	No control group	Grp1: At 3 months No (17.36); Grp2: At 3 months Yes (30.08)	No control group	Grp1: At 3 months in 0.04%; Grp2: At 3 months in 24%	No control group

1. Pain reduction efficacy:
    - Yes – efficacious: a group mean reduction in pain score of 50% between baseline and follow up
    - No – not efficacious, <50% group mean reduction in pain
    - ? - inconclusive evidence for pain reduction or not stated in research

2. Shoulder function efficacy:
- Yes – Constant and Murley mean group score point change >25 points
- No – Constant and Murley mean group score point change <25 points

3. Calcific lesion change – Percentage of participants with radiographically verified resorption of calcific lesion.