Use of Extracorporeal Shock Wave therapy in community musculoskeletal clinic. Results from observational study.

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Background:

Extracorporeal shock wave therapy (ESWT) is a safe intervention, delivered within outpatient setting and therefore ideally suited to community musculoskeletal (MSK) service. It has been used extensively in the treatment of various MSK pathology.
Shock wave is a single acoustic pulse characterised by a rapid increase to a high peak pressure, followed by a drop to below ambient pressure. Shocks are delivered to the affected area from the point of contact at the skin surface.[1] Radial/unfocused shockwaves are generated pneumatically.
National Institute for Health and Care Excellence recommends ESWT for the treatment of Achilles tendinopathy, plantar fasciitis, tennis elbow, greater trochanteric pain syndrome (GTPS), and shoulder calcific tendinopathy, provided arrangements for audit are in place. [2]

Objectives:

To assess whether ESWT is helpful in management of various MSK disorders seen at community MSK clinics.

Methods:

Patients with refractory MSK conditions suitable for ESWT completed Musculoskeletal Health Questionnaire (MSK-HQ) at the beginning of ESWT and at 6-8 weeks follow up. Patients received 3-5 ESWT sessions delivered weekly. Electronic clinical notes of those who completed MSK-HQ were subsequently reviewed on average at 13 months after the treatment. The final clinical outcomes
were recorded: no further contact with the service, referred for another ESWT, opted for steroid injection/changed management, referred to secondary orthopaedics service.

Results:

	Age/years	Sex	Diagnosis	MSKHQ1	MSKHQ2	Long term result
1	52	f	GTPS	34	48	Repeat SWT
2	48	f	GTPS	21	35	Repeat SWT
3	68	f	GTPS	36	53	No further contact (NFC)
4	66	f	GTPS	11	29	Changed Management
5	68	f	GTPS	31	48	Changed Management
6	46	f	GTPS	17	17	Changed Management
7	61	f	GTPS	21	30	Changed Management
8	60	f	GTPS	22	32	No further contact
9	72	f	GTPS	22	31	Changed Management
10	51	f	GTPS	32	55	Repeat SWT
11	58	f	GTPS	35	35	Changed management
12	47	f	GTPS	25	45	No further contact
13	60	f	GTPS	18	32	No further contact
14	33	f	GTPS	24	32	Changed management

15	77	m	GTPS	31	35	Changed management
16	43	f	GTPS	38	56	No further contact
17	69	f	GTPS	29	29	No further contact.
18	73	f	GTPS	28	30	Changed management
19	67	m	GTPS	33	46	No further contact
20	62	f	GTPS	38	46	Repeat SWT
21	58	f	GTPS	23	34	Repeat SWT
22	72	f	GTPS	32	48	Repeat SWT
23	72	m	GTPS	27	31	Referred to orthopaedics
24	50	f	GTPS	32	26	Referred to orthopaedics
25	52	m	Plantar Fasciitis	28	15	Referred to orthopaedics
26	75	f	Plantar Fasciitis	11	27	Changed management
27	59	f	Plantar Fasciitis	28	38	NFC
28	79	m	Plantar Fasciitis	36	47	NFC
29	33	f	Plantar Fasciitis	30	38	Referred to orthopaedics
30	51	f	Plantar Fasciitis	26	51	Repeat SWT
31	61	m	Plantar Fasciitis	33	53	NFC
32	68	f	Plantar Fasciitis	30	43	Changed management
33	55	f	Plantar Fasciitis	25	51	NFC
34	65	f	Plantar Fasciitis	23	40	NFC
35	72	m	Plantar Fasciitis	40	41	NFC
36	58	f	Plantar Fasciitis	21	52	NFC
37	45	f	Tennis elbow	21	9	Referred orthopaedics
38	45	f	Tennis elbow	34	45	NFC
39	69	f	Tennis elbow	25	48	NFC
40	41	f	Tennis elbow	15	19	Ref. to orthopaedics
41	49	m	Golfer's elbow	23	33	Ref. to orthopaedics
42	58	m	Golfer's elbow	35	46	NFC
43	61	f	Insertional Achilles tendinopathy	36	52	Repeat SWT
44	77	m	Insertional Achilles tendinopathy	11	13	Referred to orthopaedics
45	68	f	Insertional Achilles tendinopathy	40	50	NFC
46	49	f	Insertional Achilles tendinopathy	27	26	Ref. to orthopaedics
47	68	f	Insertional Achilles tendinopathy	35	52	NFC
48	64	f	Insertional Achilles tendinopathy	32	33	NFC
49	68	f	Midporton Achilles tendinopathy	42	46	NFC
50	66	m	Midporton Achilles tendinopathy	31	37	Repeat SWT
51	51	m	Midporton Achilles tendinopathy	36	39	NFC
52	54	m	Patella tendinopahty	41	48	NFC

53	48	m	Patella tendinopahty	28	32	Changed management
54	49	m	Prox hamstring tendinopathy	45	48	Referred to orthopaedics
55	65	f	Prox hamstring tendinopathy	34	45	Repeat SWT
56	63	m	Myofascial pain - calf	44	56	NFC
57	54	f	Calcific tendinopathy	16	17	Referred to orthopaedics

57 patients completed MSK-HQ and necessary follow up. We have used ESWT in the treatment of 24 patients (42.1%) with greater trochanteric pain syndrome, 12 (21%) patients with plantar fasciitis, 6 (10.5%) patients with insertional and 3 (5.2%) with mid portion Achilles tendinopathy, 4 with tennis elbow (7%), 2 patients with golfers elbow (3.5%), 2 with patella tendinopathy, and 2 with proximal hamstring tendinopathy, 1 (1.7%) patient with calcific tendinopathy and 1 with calf myofascial pain syndrome.

Average patients age was 59.7 (33-79). We had 16 male (28.1%) and 41 (71.9%) female patients. 37 patients (64.9%) showed significant improvement of 6 and more points on MSK-HQ when followed up at 6-8 weeks. Despite initial improvement 19 patients (51.3%) relapsed and required further management: ESWT (10 patients), steroid injections, referral to orthopaedics.
During electronic clinical notes review at 9-15 months post treatment, 59.7% of patients either requested further ESWT (10 patients) or made no further contact with the MSK/orthopaedic service (24 patients). 19.3% (11) of patients were referred to secondary orthopaedic sector for further management. 21% (12) of patient changed management from ESWT to steroid injection or further physiotherapy.
Our results are not so far dissimilar from the study by Sultan and Lovell (2015), who observed improvements in 66.7% of patients with refractory GTPS. They also observed that 60% of patients had a relapse of their symptoms at a mean of 3.7 months.

Conclusions:
Overall, ESWT was a useful treatment option/adjunct offered by our MSK service. 66.6% of patients reported significant short term improvements on MSK-HQ rating of musculoskeletal health and 59.7% of patients did not seek any other treatments when their notes were reviewed at 9-15 months.
Temporary pain and infrequent bruising were the only side effects observed during the treatment. No long term side effects were observed.
Since there is a high likelihood of a relapse of the symptoms, a further use of ESWT is advised with patient follow up at 3, 6, 9 and 12 months to monitor for the timing of symptoms relapse and implementation of subsequent course of ESWT or other treatment options if necessary.

References:
1. https://www.swissdolorclastacademy.com/therapy/swiss-dolorclast-method/; accessed on 30.01.2018.
2. https://www.nice.org.uk/guidance/ipg311/chapter/1-Guidance; accessed on 30.01.2018
3. Sultan J, Lovell M, Extracorporeal Shockwave therapy for refractory Greater trochanteric pain syndrome. MOJ Orthop Rheumatol 2015, 2(3): 00050.