group III then group I then group II after treatment and 3 months later but there was no significant difference between the three groups after 6 months follow up.

Table 1 Pre- and post-treatment clinical measurement of the patient groups

| | Baseline | | | | After treatment | | | | After 3 months | | | | After 6 months | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | G I | G II | G III | G IV | G I | G II | G III | G IV | G I | G II | G III | G IV | G I | G II | G III | G IV |
| VAS | 8.54 ±1.42 | 8.75 ±1.07 | 8.27 ±1.92 | 7.94 ±1.93 | 5.24 ±2.41 | 5.55 ±1.8 | 4.65 ±2.06 | 7.27 ±1.82 | 5.61 ±2.74 | 6.1 ±1.95 | 5.05 ±1.76 | 7.63 ±2.06 | 5.94 ±2.34 | 6.16 ±2.35 | 5.75 ±2.03 | 7.79 ±1.52 |
| WOMAC (Total) | 68.95 ±13.87 | 67.95 ±15.07 | 69.58 ±13.8 | 66.7 ±18.4 | 43.75 ±17.6 | 49.14 ±18.5 | 40.0 ±15.28 | 66.14 ±27.3 | 43.35 ±13.9 | 48.84 ±16. 8 | 40.09 ±16.21 | 64.3 ±15.83 | 45.7 ±19.26 | 50.12 ±8.54 | 43.0 ±16.48 | 69.42 ±17.53 |
| 50 meters walking time(s | 77.95 ±40.4 | 68.9 ±47.32 | 79.26 ±30.7 | 84.35 ±40.56 | 64.35 ±35.4 | 66.57 ±35.8 | 60.5 ±37.47 | 81.95 ±23.5 | 66.0 ±33.84 | 68.17 ±25.2 | 61.25 ±33.4 | 79.95 ±23.5 | 64.6 ±33.4 | 65.52 ±30.8 | 62.5 ±34.7 | 80.04 ±33.6 |
| Lequesne index | 14.2 ±3.56 | 13.66 ±2.5 | 14.61 ±4.2 | 13.3 ±3.21 | 10.2 ±4.5 | 10.2 ±3.51 | 10.0 ±3.52 | 13.1 ±3.53 | 10.18 ±3.65 | 10.31 ±3.81 | 10.07 ±4.31 | 13.6 ±3.6 | 10.3 ±4.53 | 10.29 ±5.51 | 10.13 ±2.5 | 14.1 ±2.95 |
| -HAD anxiety subscore | 9.05 ±4.65 | 8.50 ± 3.84 | 8.8 ±4.6 | 9.0 ±4.65 | 7.4 ±4.0 | 6.5 ±2.83 | 6.5 ±3.7 | 8.8 ±3.7 | 7.4 ±3.6 | 6.4 ±2.5 | 6.3 ±3.2 | 9.2 ±4.2 | 7.6 ±4.0 | 6.8 ±3.5 | 6.5 ±3.6 | 8.9 ±4.0 |
| -HAD depression subscore | 7.60 ± 5.95 | 7.20 ± 4.87 | 7.4 ±5.07 | 7.3 ±4.6 | 6.6 ±4. 5 | 6.25 ±4.25 | 5.9 ±4.0 | 7.0 ±4.5 | 6.7 ±4. 7 | 6.3 ±4.9 | 5.5 ±3.6 | 7.0 ±4.0 | 6.6 ±4.3 | 6.5 ±2.6 | 6.0 ±3.7 | 7.3 ±3.2 |

**Conclusions:** Perineural Injection Therapy is an effective new modality in management of pain, physical function, ambulation activity, disability and psychological status in moderate and severe knee osteoarthritis.

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## FRI0688 FAST ACCESS TO ASSESSMENT SUPPORT AND TREATMENT (FAAST): INNOVATION TO IMPROVE SERVICE

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**Background:** Physiotherapy is integral to rheumatology MDT. Early physiotherapy interventions optimise education, self-management and enhance outcomes. Delay in first physiotherapy assessment leads to non engagement, altered clinical features and adverse outcomes[1]. Our physiotherapy service provided appointment based assessments. Each new patient appointment was for 60 minutes. We had an average of 43 day wait to see routine patients. Non attendance rate was high, patients did not value the benefits of physiotherapy and therapist was not able to provide input in patient management.
To improve service, a new system of Fast Access to Assessment, Support and Treatment (FAAST) was introduced in April 2017, allowing patients same day access to physiotherapy on the day of referral.
**Objectives:** 1. To assess the impact of FAAST on non-attendance rate and subsequent visits.
2. To analyse the type of interventions, time spent on assessment and benefits on resource utilisation.
**Methods:** Patients completed a body chart to document their symptoms and a baseline Burton-Patient Reported Outcome Measure (B-PROM)[2,3]. These informations allowed the therapist to assess patients' priorities. Physiotherapist and patient then decided upon the appropriate and possible intervention on the day and subsequent visits. Follow up appointments were made based on clinical need and patient's convenience. We collected data prospectively on type of intervention, time spent on assessment, attendance to subsequent sessions and compared to the data from conventional physiotherapy clinics.
**Results:** FAAST project started in April 2017. This ran parallel to the conventional clinic. Now it is the main portal of referral to physiotherapy. We present data from April 2017 to November 2017. 495 out of 952 patients referred in this period were assessed in the FAAST clinic.
1. Average wait time in conventional clinic was 43 days for routine and 19 days for urgent. In FAAST clinic, every patient was assessed by the physiotherapist on the day of referral eliminating waiting time. Average time to second review after FAAST clinic was 23 days.
2. Type of assessment was decided on the first visit to FAAST clinic. About 70% patients were booked for one to one sessions and about 15% were booked into group sessions designed for specific disease conditions. FAAST assessment helped to identify patients needed to be referred to other specialist therapy areas also.
3. Non-attendance rate for the first appointment in conventional clinic for preceding three year period was 13%. Every patient referred to FAAST clinic attended the first appointment and non-attendance at second appointment improved to 9.5%.
4. Average time spent by the therapist at first FAAST clinic was 29 minutes which equated to saving of 242 hours compared to conventional clinic. Pre FAAST era, 100 new patients were seen a month on an average. Since FAAST clinic started, this increased to 136 a month.
**Conclusions:** 1. FAAST clinic achieves its objective of reducing waiting times and non-attendance rate.
2. Average assessment time was flexible, saved time and helped to improve efficiency of the clinic.
3. Assessment and intervention on the day of assessment helped to target the therapy more effectively.

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## FRI0689 A CONSERVATIVE TREATMENT OPTION FOR CARPAL TUNNEL SYNDROME: EXTRACORPOREAL SHOCK WAVE THERAPY. PROSPECTIVE, RANDOMIZED, DOUBLE BLIND PLACEBO CONTROLLED STUDY

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**Background:** Carpal tunnel syndrome (CTS) is the most common entrapment neuropathy that occurs as a result of median nerve compression at the wrist. Extracorporeal shock wave therapy (ESWT) is specified as a treatment with high amplitude acoustic waves that focus on a region of the body. While ESWT is frequently used to treat musculoskeletal disorders such as plantar fasciitis and tendinitis, in recent years ESWT has become a new treatment option in CTS. Positive results have been reported from limited number of studies which were assessed efficacy of ESWT in CTS treatment. On the other hand it is noteworthy that the number of patients in these studies is not high and there is no clear consensus on the concept of shock wave energy density and frequency due to lack of experience (1,2,3).
**Objectives:** To evaluate the efficacy of ESWT in CTS and compared to wrist splint treatment in this prospective, randomized double-blind, placebo-controlled trial.
**Methods:** One hundred eighty-nine patients with mild/moderate CTS were included. Patients were assigned to 4 different treatment groups (1-Splint, 2-Splint + ESWT, 3-ESWT, 4-Splint+ placebo ESWT) by using stratified randomization to ensure balance of the treatment groups respect to the various combinations of the prognostic variables in terms of in terms of age, gender, and severity of CTS. 168 patients completed the study at third month. ESWT was performed on the area included 2 cm proximal to the pisiform bone. It was applied with 1000 shots, 0.05 $mJ/mm^2$ intensity of energy and frequency of 5 Hz. (3 weeks, once a week). Wrist splint with suitable size and neutral position was suggested. Patients were evaluated at baseline, first and third month. Pain, finger pinch strength, Boston Carpal Tunnel Questionnaire (BCTQ), Leeds Neuropathic Symptom and Finding Assessment (LANSS) and electrophysiological examination were assessed.
**Results:** Demographics, clinical characteristics of the patients are shown in table 1. Significant pain and functionality improvement was found in all groups ($p<0.05$) at first and third months. The improvements in clinical and electrophysiological variables were compared between four groups In group 2, baseline- first month finger pinch increase was higher than groups 1 and 4, and the baseline- third month finger pinch increase was higher than group 4. In group 2, the increase in mMNCV was higher than group 1.

Table 1 Baseline demographic and clinic characteristics of patients

| | Group 1 n =47 | Group2 n=47 | Group3 n=45 | Group4 n=50 | p |
|---|---|---|---|---|---|
| **Age (year)** | 48.1 ± 10.13 | 48.38 ±10.12 | 50 ± 8.56 | 48.48 ±9.79 | 0.325§ |
| **Gender** | | | | | |
| *Female n, %* | 40, 85.1% | 39, 83% | 41, 91.1% | 47, 94% | 0.298 ᵀ |
| **Education duration (year)** | 5.68 ± 3.49 | 7.48 ± 4.21 | 5.51 ± 3.25 | 6.84 ± 3.25 | 0.002* |
| **Co-morbid disease** | | | | | |
| *DM: %* | 15% | 15% | 8.8% | 22% | |
| *Hypothyroidism:%* | 19.2% | 25.6% | 13.3% | 18% | |
| *HT:%* | 21.4% | 23.5% | 20% | 26% | 0.940 ᵀ |
| **Symptom duration (month)** | 22.21 ±26.93 | 33.68 ±38.10 | 23.48 ±27.27 | 24.8 ±31.47 | 0.152 |
| **VAS night** | 6.23 ± 3 | 6.11 ± 2.69 | 5.89 ± 2.86 | 6.01 ± 2.56 | 0.899 |
| **VAS** | 4.17 ± 3.04 | 4.22 ± 2.3 | 4.13 ± 2.55 | 4.54 ± 2.39 | 0.876 |
| **BCSS** | 2.63 ± 0.86 | 2.54 ± 0.67 | 2.53 ± 0.89 | 2.54 ± 0.74 | 0.914§ |
| **BCFS** | 2.23 ± 0.95 | 2.3 ± 0.73 | 2.24 ± 0.76 | 2.47 ± 0.69 | 0.480 |
| **Finger pinch (kg)** | 5.02 ± 1.66 | 5.74 ± 1.83 | 5.1 ± 1.32 | 4.9 ± 1.4 | 0.017 *,§ |
| **LANSS** | 9.85 ±6.81 | 9.13 ± 5.93 | 9.56 ± 6.15 | 9.45 ± 5.95 | 0.900 |
| **Neuropathic pain + ** (n,%)** | 30 (41.7%) | 27 (38.6%) | 26 (40.6%) | 24 (29.3%) | 0.361 ᵀ |

***Group 1:*** *Only wrist splint treatment,* ***Group 2:*** *rESWT + wrist splint treatment,* ***Group3****: Only rESWT,* ***Group4****: Placebo rESWT + wrist splint treatment,* ***n****: number of patients,* ***DM*** *:Diabetes mellitus,* ***HT:*** *Hypertension;* ***VAS:*** *Visual Analog Scale, (0-10 cm),* ***BCTQs:*** *Boston Carpal Tunnel Symptom Severity Score,* ***BCTQf:*** *Boston Carpal Tunnel Functional Capacity Score,* ***LANSS:*** *Leeds Assessment of Neuropathic Symptoms and Signs;* ***kg:*** *Kilogram,* ᵀ *Chi square test* § *one way analysis of variance (kruskal wallis analysis was used for parameters without normal distribution)*

**difference between Group 1 and Group 2 p=0.021*

**difference between Group 2 and Group 3 p=0.006*

*#, difference between Group 2 vs Group 4, p=0.018*

*** LANSS score ≥12*

**Conclusions:** In the group with ESWT and using wrist splint together, it was found that the improvement of hand function and electrophysiological measures was higher than other groups. ESWT, a valuable and practical treatment modality without serious side effects, reduces pain, neuropathic symptoms, disability and improves electrophysiological findings for patients with mild to moderate CTS.

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FRI0690

## COMPARISON OF EFFECTIVENESS OF DIFFERENT STRETCHING EXERCISES COMBINED WITH PRESSURE RELEASE TECHNIQUE ON LATENT TRIGGER POINTS IN THE PECTORALIS MINOR MUSCLE

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**Background:** A myofascial trigger point (MTrP) is a hyperirritabl spot located in a palpable taut band of skeletal muscle which are painful upon compression, stretching, or overload of the muscle. It is well known that latent triggerpoint (LTrPs), highly prevalent in healthy subjects, are usually silent even though they can easily develop into ATrPs under the influence of perpetuating factors; therefore LTrPs need to be treated.
**Objectives:** To investigate which type of stretching exercise using after a single-session ischemic compression is more effective for muscle length, pressure pain threshold (PPT), pulmonary function, and respiratory muscle strength in subjects with latent trigger point in the pectoralis minor (PM) muscle.
**Methods:** Two-hundred-six individuals were screened for possible inclusion criteria. Fourty subjects were randomized to the Group-1 (ischemic compression with modified contract-relax PNF stretching), Group-2 (ischemic compression with static stretching), Group-3 (ischemic compression with myofascial release) or Group-4 (no intervention). The assessments were performed at baseline, immediatley after the intervention, and at 24-hours later. The pectoralis minor length (PML) was measured using a standard tape measure. Then, pectoralis minor index (PMI) was calculated. Rounded shoulder posture (RSP) was assessed by the measuring the distance between the posterior border of the acromion and the table 1. Digital algometer was used to evaluate the PPT; spirometer and respiratory pressure meter were used to assess pulmonary function and maximal respiratory pressure, respectively.
**Results:** Improvements were found for PML and PMI between baseline and immediately after intervention in Group-1 and Group-3 ($p<0.05$). RSP showed a significant improvement only in Group-3 ($p=0.03$), whereas there was a statistically significant improvement for PPT value in Group-1 immediately after intervention ($p=0.005$). Significant difference were found in the PEMax at baseline to 24-hours later in Group-1 ($p<0.05$). There was a statistically significant difference in the PIMax and PEMax in Group-3 ($p<0.05$).
**Conclusions:** For effective trigger point therapy, ischemic compression should be followed by myofascial release or contract-relax PNF stretching exercises.

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# Education

FRI0691

## EFFECT OF AN EDUCATIONAL INTERVENTION BASED ON CLINICAL SIMULATION IN THE DIAGNOSIS OF PSORIATIC ARTHRITIS IN LATIN AMERICAN DERMATOLOGISTS

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**Background:** Previously our group has shown the use of clinical simulation in rheumatology, an area in which it had not been used. We demonstrated the effectiveness of an educational intervention based on clinical simulation to improve the diagnostic approach to RA[1], so we wanted to apply this same principle in the learning of Psoriatic Arthritis (PsA) and SpA (Spondyloarthritis).
**Objectives:** This paper wants to quantify the rate of improvement in the diagnosis of Psoriatic Arthritis (PsA) among a group of Latin American dermatologists who received an educational intervention based on clinical simulation.
**Methods:** Observational study before and after
**Results:** 192 Latin American dermatologists recieved an educational intervention based on clinical simulation. The topic of this educational intervention was based on PsA. A workshop that includes clinical simulation models of feets, fingers and a mannequin with prominent enthesis was created for this purpose. It was used an strategy of problem-based learning. The workshop lasted 5 hours and it was divided into two parts: the first was about the clinical approach of joint pain and lumbar pain diagnosis and relevant aspects of PsA. The second part focused on clinical cases applied to clinical simulation models, applying the knowledge acquired during the theoretical phase. Participants made a several stations where they could appreciate for periods of 15 minutes each simulator of 3 feets, 6 simulated fingers and a mannequin where they can identify entheses, dactylitis, arthritis, psoriasis lesions and improve visual and tactile sensitivity in each semiologic findings for the diagnosis of PsA. The participants filled out a pre and post test, which included 6 (six) clinical cases with simulators and photographs of hands and feets of patients with suspected PsA. 192 participants (82 %