P70 - THE RESULT OF A SEQUENCED REHABILITATION PROTOCOL FOR ANKYLOSING SPONDYLITIS

Sharan D.
Dept. of Orthopaedics and Rehabilitation, RECOUP Neuromusculoskeletal Rehabilitation Centre, Bangalore, India

Introduction: Ankylosing spondylitis (AS) is a chronic inflammatory rheumatic disease involving the sacroiliac joints, vertebrae and adjacent joints of the spine and peripheral joints. Nearly 0.9 % of the population are estimated to be affected by AS and men are affected two to three times more than women. Symptoms starts to appear during young adulthood and usually take many years to manifest radiological changes. To date, AS has no cure, but drug and physical therapy can improve pain, inflammation and other symptoms considerably. The objective of rehabilitation in AS is to improve the physical functioning and allow individuals to handle basic activities of daily living without assistance.
However, no studies exist that describe the outcome of a structured rehabilitation protocol in AS.

Aim: The aim of this study was to assess the result of a sequenced rehabilitation protocol for the management of ankylosing spondylitis.

Methods: A total of 37 patients with AS were recruited for this study (36 males, 1 female), with a mean age of 37.3 years (range 22-67). A diagnosis of AS was made by modified New York Criteria. Participants followed a sequenced rehabilitation protocol programme for 60 minutes per day for 3-4 months. The sequenced physiotherapy protocol was as follows: *Phase 1*: Hot packs, Electrotherapy modalities (US / TENS / IFT), Myotherapy (especially myofascial release and muscle energy techniques), Maitland mobilization (Grade I and II), range of motion exercises of spine and other joints, relaxation training and breathing exercises, taping for pain-relief, sleep hygiene training; *Phase 2*: Gentle active and passive stretches, postural re-education and ergonomic accessories, taping for proprioception; *Phase 3*: Aerobic conditioning, cardiovascular and strength training, Yoga; *Phase 4*: occupational therapy, home exercise program, sporting activities.

Outcome Measures: The outcome measures were VAS for pain and morning stiffness, Bath Ankylosing Spondylitis Functional Index (BASFI) and Bath Ankylosing Spondylitis Disease Activity Index (BASDAI). Measurements were taken before and after the treatment and follow up was done 6 months later. The BASDAI index is self-administered instrument and is specific to AS. This instrument measures both qualitatively and quantitatively the problems in fatigue, spinal and peripheral joint pain, morning stiffness and localised tenderness. It consists of 6 to 10- cm VAS. (26,27). The BASFI is a self-assessment functional index. There are 8 questions all relating to AS and 2 questions regarding the patient's ability to cope with daily life. Each question is answered on a 10-cm VAS, the mean of which gives the score for BASFI (0–10). (24,25).

Results: The sample included 37 patients (36 males, 1 female), with a mean age of 37.3 years (range 22-67). 30 were IT professionals, 3 retired, 1 HR manager, 1 marketing professional, 1 government official and 1 academic professor.
The presenting symptoms were low back pain, stiffness and disturbed sleep in all 37 patients. The other symptoms included pain in single lower limb (n=15), both lower limb (n=14), neck and upper back (n=10), pain and swelling in knees and ankles (n=5). The pain was typically worse on sitting and lying down. Numbness, tingling and burning in lower back and/or legs was present in 8 patients. 10 subjects had advanced bony ankyloses of spine and 5 of the hips. The mean duration of symptoms at the start of rehabilitation was 5 years and the mean duration of symptoms before a diagnosis was made was 4 years. The associated co-morbidities were hyperuricemia (n=5), hypovitaminosis D (n=5), prolapsed lumbar intervertebral disc (n=4), osteoporosis (n=3), osteopenia (n=2), glomerulonephritis (n=2), rheumatoid arthritis (n=2) and systemic lupus erythematosus (n=1).10 of these patients were already on Disease Modifying Anti Rheumatic Drugs such as Methotrexate, Sulfasalazine and Leflunamide and they continued the medication during the course of the study. VAS for pain and morning stiffness ($p<0.01$), BASFI ($p<0.01$) and BASDAI ($p<0.01$) showed a significant improvement after treatment and was maintained at 6 months.

Conclusion: In conclusion, patients with AS reported significant improvements in pain, spinal mobility, chest expansion and physical functioning as a result of the sequenced rehabilitation

programme. The improvements in the patient's health status and spinal mobility measures were maintained at 6 months.

Keywords: ankylosing spondylitis, sequenced rehabilitation protocol, physiotherapy

References:
1.   Rehabilitation techniques in ankylosing spondylitis management: a case report Shawn Henderson, BSc (Hons), DC, DACRB, FCCRS(C)*, *J Can Chiropr Assoc* 2003; 47(3)
2.   Sieper J., Braun J., Rudwaleit M., Boonen A., Zink A. Ankylosing Spondylitis: An Overview. *Ann Rheum Dis* 2002; 61 (Suppl III):iii8–iii18
3.   The Natural History of Ankylosing Spondylitis as Defined by Radiological Progression. *J Rheumatol* 2002; 29:1236–43
4.   Efficacy of rehabilitation for patients with ankylosing spondylitis: comparison OF a FOUR-week rehabilitation programme in a Mediterranean and a Norwegian setting,*Yndis A J Rehabil Med* 2011; 43: 534–542
5.   Mihai B,. van der Linden S., de Bie R., Stucki G. Experts' beliefs on physiotherapy for patients with ankylosing spondylitis and assessment of their knowledge on published evidence in the field. Results of a questionnaire among international ASAS members. *Eura Medicophys* 2005; 41: 149–153.
6.   Zochling J., van der Heijde D., Burgos-Vargas R., Collantes E., Davis J.C. Jr, Dijkmans B., et al. ASAS/ EULAR recommendations for the management of ankylosing spondylitis. *Ann Rheum Dis* 2006; 65: 442–452
7.   Waldner A., Cronstedt H., Stenstrøm C.H. The Swedish version of the Bath ankylosing spondylitis disease activity index. Reliability and validity. *Scand J Rheumatol* 1999; 28: 10–16
8.   Garrett S., Jenkinson T., Kennedy L.G., Whitelock H., Gaisford P., Calin A. A new approach to defining disease status in ankylosing spondylitis: the Bath Ankylosing Spondylitis Disease Activity Index. *J Rheumatol* 1994; 21: 2286–2291
9.   Cronstedt H., Waldner A., Stenstrom C.H. The Swedish version of the Bath ankylosing spondylitis functional index. Reliability and validity. *Scand J Rheumatol* – Suppl 1999; 111: 1–9
10.   Calin A, Garrett S, Whitelock H, Kennedy LG, O'Hea J, Mallorie P, et al. A new approach to defining functional ability in ankylosing spondylitis: the development of the Bath Ankylosing Spondylitis Functional Index. *J Rheumatol* 1994; 21: 2281–2285