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Is shoulder pain for three months or longer correlated with depression, anxiety and sleep disturbance?

Chul-Hyun et al.

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Summary

Purpose

Recent studies have found a high prevalence of depression, anxiety, and sleep disturbance in patients with chronic musculoskeletal pain, such as osteoarthritis, rheumatoid arthritis, fibromyalgia, and low back pain, and these psychologic conditions can influence the effectiveness of treatment and rehabilitation programs. This study investigates if long standing pain can cause psychological problems? In addition, are some people more prone to develop psychological problems when they have an ailment?

Methods

The authors recruited 130 patients with shoulder pain more than three months duration irrespective of any previous conservative treatment for the Group I. This group included 96 patients with rotator cuff tears out of which 51 were partial thickness tears, 39 full thickness tear and 8 multitendon tears. There were 24 patients with adhesive capsulitis and 10 patients with calcific tendinitis. The diagnosis was confirmed on US/MRI. The exclusion criteria for this group was patients with shoulder pain less than three months duration, any associated musculoskeletal pain, any systemic diseases, any surgical procedure on the shoulder and any history of psychiatric disorder

The control group consisted of 60 patients who had visited the hospital with a complaint unrelated to shoulder disease or musculoskeletal problem. These patients were age and sex matched. The exclusion criteria in this group were any associated musculoskeletal pain, any systemic diseases and any history of psychiatric disorder.

Outcome measures

1. **VAS pain scale 0-10:** The VAS pain score is rated from 0 (no pain) to 10 points (unbearable pain) using a measurement device. Participants point to the position on the line between the faces to indicate how much pain they are currently feeling.
2. **ASES:** The ASES is self-rated scale designed to evaluate shoulder function and outcome. It is composed of the VAS pain score (50%) and a score assessing the cumulative activities of daily living (50%).

3. Korean Shoulder Score: 5 section and score up to 100 points with sections including function, pain, satisfaction, ROM, Muscle power and endurance. The KSS is designed to evaluate shoulder function related to shoulder disorders. It includes 5 domains totalling 100 points: function (30 points), pain (20 points), satisfaction (10 points), range of motion (20 points), and muscle power, consisting of strength (10 points) and endurance (10 points).

4. Hospital anxiety and depression score: The HADS is a 14-item scale designed to detect anxiety and depression, independent of somatic symptoms. It consists of two 7-item subscales measuring depression (HADS-D) and anxiety (HADS-A). The HADS has been widely used as a screening instrument for the detection of co morbid depressive and anxiety disorders in patients with musculoskeletal disorders. It uses a 4-point response scale that ranges from 0 (absence of symptoms) to 3 (maximum symptoms), with possible scores for each subscale ranging from 0 to 21. Higher scores indicate higher levels of disorder. A number of clinical classification schemes have been used to categorize scores on the HADS. The following cut offs are suggested: 0 to 7, normal; 8 to 10, mild case; 11 to 15, moderate case; 16 to 21, severe case.

5. Pittsburgh Sleep Quality Index: The PSQI is a 19-item, self-reported, questionnaire-based assessment that obtains information from the patient about sleep habits during the preceding month to measure subjective sleep quality. It has been widely used in various studies and is suitable for monitoring insomnia in clinical practice. This questionnaire scores subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. For our assessment, insomnia was defined as a total score of more than 5.

Results

The two groups (I and II) were similar in age, sex, level of education, marital status, occupation, tobacco use, and alcohol use were not statistically significant.

Mean duration of symptoms in Group I was 21 months.

No difference for any score was noted for different shoulder pathologies or amongst the different subgroup in the rotator cuff tear group. Poorer KSS was noted in patients with adhesive capsulitis.

In Group I higher scores for HADS both anxiety and depression were noted. In addition increased PSQI scores was noted in Group I. Also increased prevalence of depression, anxiety and sleep disturbance was noted in group I as compared to group II. There was positive correlation note between VAS & PQSI scores and negative correlation between ASES & KKS and HADS & PQSI.

- Shoulder pain more than three months was noted to be a strong predictor of sleep disturbance.

Discussion

This study investigates whether shoulder pain for 3 months or longer correlates with depression, anxiety, and sleep disturbance. This study shows that patients with shoulder pain more than three months had increased pain (VAS 6.2), more disability (lower ASES & KSS). They were noted to have a high prevalence of depression, anxiety, and sleep disturbance. These patients were more prone to develop anxiety and depression and especially sleep disturbance.

Critique

Strengths

- Interesting study looking at psychological disturbance in patients with pain.
- Reveals finding in shoulder problem patients similar to other chronic diseases like rheumatoid arthritis and low back pain.
- Uses both clinical and specific psychological scores (HADS & PQSI)
- Thorough exclusion criteria

Study design:

- Unequal groups Group 1 (130) and Group II (60)
- Small number and hence difficult to generalise
- Unequal shoulder pathology groups and sub groups
- Controls not actually controls as had other ailments hence difficult to rule of psychological effects of other ailments.
- Short time period: Three months

What could they have done better?

- Longer duration to see the effect of time on the psychological scores.
- Whether treatment makes a difference on functional score so to see if treatment improves scores or not and hence whether managing these patients early would help reduce psychological distress.

Overall Conclusion

- Good study that informs us about associated psychological problems shoulder patients develop when in pain / disabled over a period and that long term pain (shoulder) associated with sleep disturbance, anxiety and depression

Recommendation

- Possibly in patients longer duration of pain we should look out for psychological distress (? psychological scoring routinely done as a part of assessment) and in patients with signs of depression, anxiety, and sleep disturbance appropriate counselling should be instituted at the earliest.