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Title

Identifying clinically relevant subgroups of patients with knee pain flare-ups for ibuprofen treatment

Priority 1 (Research Category)

Musculoskeletal and rheumatology

Presenters

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Abstract

Context

Symptom flare-ups in knee osteoarthritis (OA) are associated with progression of OA, through worsening of synovitis. The randomised controlled trial (RCT) 'Flaring Arthralgia Relief Evaluation in episodic flaring knee pain' (FLARE) has shown no clinical benefit of a higher dose non-steroidal anti-inflammatory drugs (NSAIDs) over a lower dose, among individuals with a flare-up of knee pain.

Objective

To identify potential subgroups of patients with a knee pain flare-up who benefit from a high dose NSAIDs treatment.

Study Design and Analysis

This is a secondary explorative data analysis of a previous performed RCT (FLARE). A multilevel regression analysis was performed to estimate the magnitude of the effect of ibuprofen treatment in the different subgroups and to assess interaction effects.

Setting/Dataset

The FLARE study was conducted at 27 primary care centers, located in the United Kingdom and the Netherlands. From this dataset we selected patients treated with a total daily dose of 1200mg or 2400mg for 5 days, with a value of pain severity on the numerical rating scale (NRS) and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain score at least at baseline and end of treatment.

Population Studied

Adults with a history of ≥1 knee pain flare episodes in the previous year (with or without treatment) and attending a baseline evaluation within 24 hours after experiencing a new episode (defined as pain severity ≥5 on a 0–10 NRS).

Intervention

Subgroups (severity of morning stiffness, swelling, and pain) have been defined based on literature and clinical expertise.

Outcome Measures

The primary outcome was the difference in pain severity after full treatment. Difference in WOMAC pain subscale after 5 days and in pain severity after 3 days were secondary outcomes.

Results

The cohort (n=308) existed of a population with a mean age of 52.4±12.9 (SD) years and 41% females. No significant interaction was found between the predefined subgroups and the treatment effect on pain severity after day 5 (p-values ≥0.28) or on the secondary outcomes (all p-values ≥0.17). Given the potential lack of power, the absolute and adjusted mean differences between treatment arms were compared for each subgroup; none of the differences reached clinical significance.

Conclusion

Ibuprofen 2400mg had no significant or clinical beneficial effect compared to 1200mg among the pre-defined subgroups of patients with indications for knee joint inflammation.