

Effects of Pentosan Polysulfate in Osteoarthritis of the Knee: A Randomised, Double Blind Placebo-Controlled Pilot Study

From the study, *Ghosh P, #Edelman J, *March L and *Smith M (2005)
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Objective

The aim of the study was to assess the ability of sodium pentosan polysulfate (NaPPS) to improve pain and function in human knee osteoarthritis (OA).

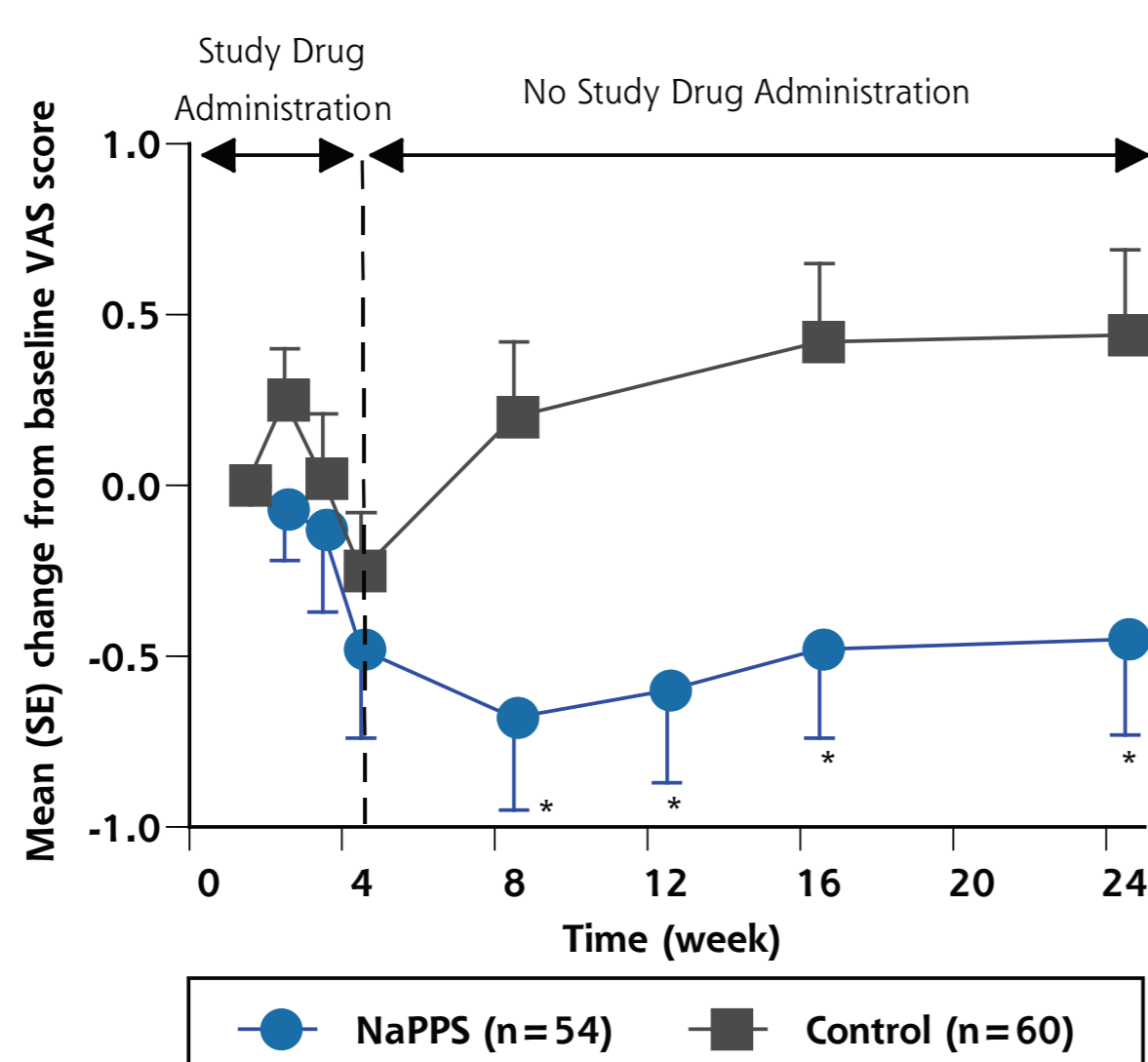
Methods

A randomized, double-blind, placebo controlled pilot study was conducted in 114 patients aged 18 years or over with OA of the knee. Treatments were either intramuscular (IM) NaPPS (3mg/kg) or Ringer's solution (control) once weekly for 4 weeks. Efficacy was assessed at enrolment, weekly during the 4 weeks of treatment and at weeks 8, 12, 16 and 24. Seven direct clinical assessments and 13 function activities of daily living (ADL) were assessed using 10cm visual analogue scales. Tolerability was assessed by haematology and biochemistry (weeks 4 and 12) and questioning of patients about adverse events (each visit).

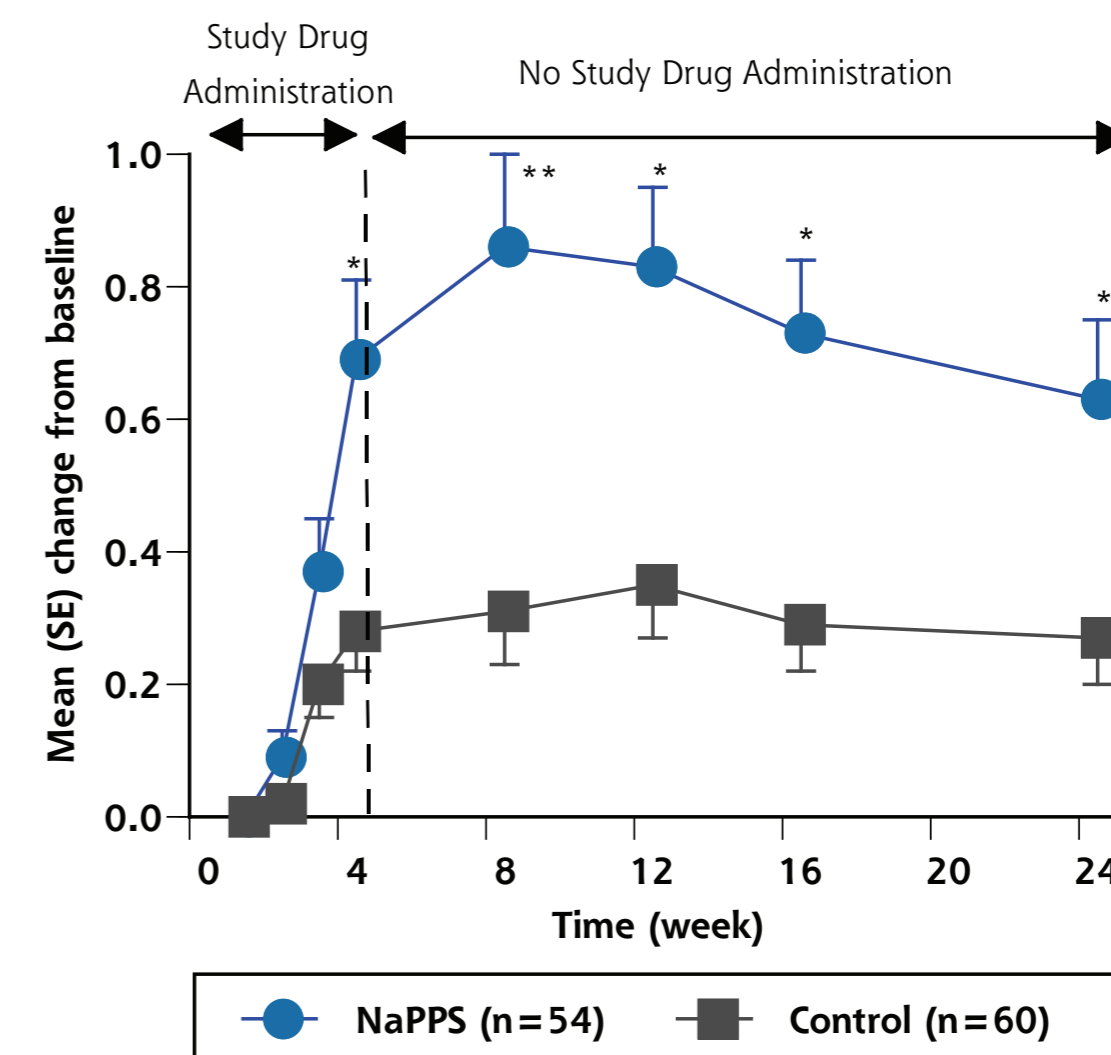
Results

Significant differences in favour of NaPPS for 3 direct clinical assessments (duration of joint stiffness, pain at rest and patient global assessment) and 3 ADLs were observed. Trial continuation rates were higher in the NaPPS group at 8, 12 and 24 weeks. No evidence of haematological or biochemical abnormalities were identified. Mild bruising at the injection site occurred in < 1% of patients in both groups.

Pain at rest (*p<0.02)



Patient global assessment (*p<0.01, **p<0.001)



Discussion

Four weekly injections of NaPPS significantly improved duration of joint stiffness and pain at rest for 20 weeks after treatment finished, while pain on walking and overall function significantly improved for 8 weeks after treatment finished. These findings suggest that NaPPS could improve functional disability in OA.

NaPPS is not an analgesic and the symptomatic relief reported for up to 20 weeks after the end of administration might be related to NaPPS modification of some aspects of OA pathobiology. Laboratory and animal model studies have found NaPPS was associated with reduced joint inflammation, improved blood flow in subchondral bone and soft tissues, and preserved proteoglycan and hyaluronan concentrations in articular cartilage and synovial fluid.

Conclusion

Four weekly injections of NaPPS significantly improved duration of joint stiffness and pain at rest compared with controls for 20 weeks after cessation of treatment and significantly improved pain on walking and overall function for 8 weeks after the cessation of treatment in these patients with OA of the knee.

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