• Intra-articular (IA) injection of polyacrylamide hydrogel (PAAG) has been suggested as a possible treatment for symptomatic osteoarthritis (OA)
• PAAG has been investigated using 2 injections of 3 ml separated by a month
• The primary objective of this study was to evaluate the efficacy and safety of a single injection of 6 ml intra-articular PAAG on knee symptoms in participants with moderate to severe knee OA.

Patients with symptomatic (WOMAC A1 ≥2/4 Likert) and radiographic (KL grade 2 to 4) knee OA were consented into this prospective, open-label study

2.5% cross-linked PAAG was used. PAAG (Contura International A/S) contains 2.5% polyacrylamide and 97.5% non-pyrogenic water, with a unique molecular structure that allows normal water exchange with the surrounding tissue without losing shape. PAAG is bioallcompatible, non-absorbable, non-biodegradable, stable, and sterile.

PAAG was provided in sterile, pre-filled 1 ml sealed syringes to be injected intra-articularly with a sterile 21G x 2 inch (0.8 x 50 mm) needle. PAAG is classified as a Class IIb device

Primary outcome was change in WOMAC pain subscale (normalized to 100 points) after 12 weeks
Secondary outcomes were WOMAC stiffness and function subscales, Patient Global Assessment of disease impact (PGA) and proportion of OMERACT-OARSI responders.
Follow-up: 4, 12, 26 and 52 weeks

• 49 patients (31 females) received IA PAAG, and 48 and 46 completed the 12 and 52 week assessments, respectively
• There were statistically and clinically significant reductions in WOMAC pain after 12 weeks (mean change -18.3 points [95% CI: -23.3 to -13.3]; P<0.0001), sustained to 52 weeks (mean change -20.8 points [95% CI -26.3 to -15.3]; P<0.0001) [Figure 1]
• Similar benefits were found for WOMAC stiffness, function [Figure 2,3], and patient global assessment. After 12 weeks, 64.6% of patients were OMERACT-OARSI responders, also maintained to 52 weeks

In the initial 12 weeks, 18 patients reported 23 AEs; 13 events were related to PAAG (most frequent: arthralgia and joint swelling) and not considered serious. No new PAAG related AEs were observed from 12 to 52 weeks. Three serious AEs occurred (atrial fibrillation, gastrointestinal pain and cerebrovascular event) all assessed as ‘not related’ to PAAG

CONCLUSION
PAAG can be delivered in a single injection and this non-randomized trial suggests that the good clinical effects at 12 weeks were maintained at 52 weeks in patients with moderate to severe knee OA. These encouraging results need to be confirmed in controlled studies.


Disclosures: HB reports consultancies or speakers bureau for Pfizer, Eli Lilly, Novo.
PGC reports consultancies or speakers bureau for AbbVie, BMS, Eli Lilly, Janssen Therapeutics, Galapagos, Gilead, Novartis and Pfizer. MH reports consultancy for Thuesan.