additional embolization procedure. No significant demographic differences were identified between the embolization and conservative management groups. Multivariable logistic regression identified active extravasation on computed tomography (CT) scan (p = 0.01), hematomas volume greater than 1300 ml (p = 0.01), transfusion of 3 or more units of packed red blood cells (pRBC) (p = 0.04), and maximum rate of hemoglobin drop greater than 0.25 g/dL per hour (p = 0.01) as predictors of need for embolization. Using these parameters, a scoring system was created to predict failure of conservative management. Application of the scoring system to patients in the study population yielded a sensitivity of 100% and specificity of 98% in determining need for embolization.

Conclusions: A considerable number of patients with spontaneous RSH included in this analysis failed conservative management. Using common clinical and imaging parameters, a scoring system was established that successfully correlated with patients with RSH who were likely to escalate to embolization. This scoring system may be useful as a tool to predict need for embolization in future patients, though further prospective study is required.

Knee osteoarthritis (OA) is a common disease with significant morbidity (1). Treatment includes oral anti-inflammatorys, intraarticular knee injection, and surgical arthroplasty. New theories propose increased hypervascularity of the joint and periarticular tissue. Some authors argue that homeostasis is tilted in knee OA to favor inflammation and subsequently leads to knee pain. While previous overseas reports of success with GAE have been published, we present our interim results from a prospective US multicenter clinical trial.

Materials: 20 subjects with OA with pain greater than 50 mm (Visual Analog Scale 100 mm) refractory to conservative therapy are being recruited for the study (clinicaltrials.gov NCT02850068). Subjects were excluded for: Kellgren Lawrence (KL) Stage 4, rheumatoid arthritis, infection, previous arthroplasty, renal insufficiency, or uncorrectable coagulopathy. GAE was performed using 75 or 100 um microspheres in 13 subjects at 2 US centers. Subjects were assessed with MRI, Visual Analog (VAS) and Western Ontario and McMaster University Osteoarthritis Index (WOMAC) pain and disability scales before and after the procedure. Adverse events were also recorded at all time points.

Results: Median baseline OA was KL stage III. Neovascularity was identified in the area of pain in all cases by arteriography (n = 13) and GAE was technically successful in all subjects (n = 13). 8/13 subjects were eligible for clinical follow-up at present. GAE significantly improved pain at 1 month as measured by VAS (n = 8, mean -36.3 mm, p = 0.008). Global WOMAC score also decreased (n = 8 mean -36.3, p = 0.0008). No major adverse events were seen related to the procedure.

Conclusions: Interim results are promising for GAE to safely reduce pain and disability for mild to moderate knee osteoarthritis.