

New injection device faster, less painful than old syringe



February 5, 2007

RELATED CE

- [Diagnosis and Treatment of HIT: A Focus on Anesthesiology and Vascular Medicine](#)

NEW YORK (Reuters Health) - A reciprocating procedure device is better than traditional syringes for injecting corticosteroids into intermediate to large inflamed joints, according to a prospective trial published in the *Journal of Rheumatology* for January. Dr. Wilmer L. Sibbitt, Jr., and his colleagues report that the device reduced patient pain, shortened procedure time, and improved physician satisfaction.

Dr. Sibbitt is the inventor of the device, which is owned by the University of New Mexico. Previous studies have demonstrated the reciprocating procedure device's superiority over conventional syringes when used to perform arthrocentesis and syringe biopsies.

The reciprocating procedure device they used in this trial is similar to the Procedur-SF syringe approved for marketing by the US Food and Drug Administration in 2005. To provide an identical syringe core for valid comparisons, they devised an experimental version made from an identical 10 mL Becton-Dickinson core with a reciprocating mechanism attached.

The trial included 104 subjects who underwent a total of 154 individual intraarticular injections of methylprednisolone. The 21 physicians injected the medication into hips, knees, wrists, elbows, ankles, and shoulders. Dr. Sibbitt and his associates at the University of New Mexico Health Sciences Center in Albuquerque randomly assigned procedures to either the conventional syringe (n = 78) or the reciprocating procedure device (n = 76).

Patient pain, according to a 10-cm visual analog pain scale, averaged 4.73 when the conventional syringe was used and 2.40 when the reciprocating procedure device was used ($p < 0.001$). The percentage of patients reporting moderate to severe pain (visual analog scale of 5 or higher) was 55% with the conventional syringe and 17% with the reciprocating procedure device ($p < 0.01$).

Mean procedure times were 1.86 and 1.28 minutes ($p < 0.01$), respectively, and corresponding physicians' ratings of their satisfaction on a visual analog satisfaction scale averaged 5.59 and 9.12 ($p < 0.001$).

While most physicians consider intraarticular injections to be minimally painful, the authors note, "formal pain studies consistently report that greater than 50% of patients experience moderate to severe pain during needle procedures on joints."

This may be caused "unintentional malpositioning and erratic motion of the needle in pain-sensitive extraarticular tissues, periosteum, joint capsule, and inflamed synovial tissues." They maintain that the aspiration phase is the most difficult part of the procedure.