Device Improves Articular Injection Outcomes

BY DENISE NAPOLI

A combination of ultrasound and a novel two-barrel syringe significantly decreased the nonresponder rate in intra-articular injections compared with a traditional, palpation-guided, single-barrel syringe method, according to findings from a study of 148 patients.

In fact, the nonresponder rate fell a significant 62%, from 28.4% in the traditional injection method group to 10% with the new, ultrasound-guided method.

Moreover, the ultrasound-guided technique reduced pain at 2 weeks by 75% compared with the traditional method.

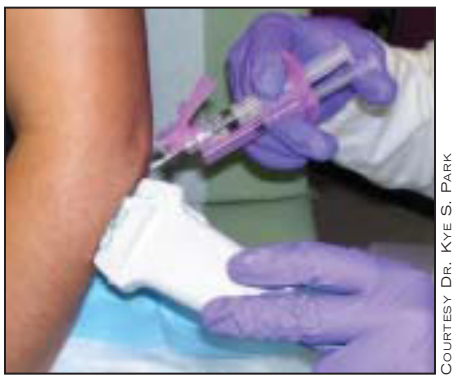
The study was randomized but not double-blinded, since both the physician and patient could see which method was used, and was presented at the Western Regional Meeting of the American Federation for Medical Research.

The novel injection method consisted of manual palpation of the joint, followed by superficial marking and assessment with ultrasound to "define the anatomy, determine the presence of effusion, and confirm the optimal anatomic approach," Dr. Kye S. Park of the University of New Mexico, Albuquerque, said in an interview.

Then, using a two-syringe needle known as the reciprocating procedure device (RPD), one barrel delivered local anesthesia and performed aspiration, if necessary, while the second barrel injected the therapeutic agent—in this study, triamcinolone acetonide.

"It's a two-barrel syringe, and essentially you control it with one hand," Dr. Park said. "You aspirate and inject by pushing one or the other plunger. Normally when you put in a one-barrel traditional syringe, when you inject, you're pressing your flexor. Then to aspirate, you have to pull out. With this, you're using the same motion to inject and aspirate, but when you push one plunger to aspirate, the other [chamber of the syringe] is the one that's actually filling up with fluid," he explained.

The traditional method used palpation-guided injections with a standard needle.



Courtesy Dr. Kye S. Park

A physician uses ultrasound and the reciprocating procedure device.

The average patient age in the ultrasound group was 52 years, compared with 56 years in the traditional group. In both groups, more than 80% of patients were female, and nearly three-quarters had inflammatory arthritis. Pain was assessed on a 0- to 10-cm visual analog scale (as opposed to the more conventionally used 0- to 100-mm scale). Nonresponders were defined as having significant persistent joint pain that was rated as being greater than or equal to 5 cm at 2 weeks following treatment.

Although physicians are becoming more aware of the benefits of ultrasound-guided intra-articular injections, the RPD is still relatively unknown among rheumatologists, said Dr. Park. It is particularly useful if a rheumatologist intends to be the sole operator of both the ultrasound and the needle, because the physician does not need to change positions, he added.

However, both ultrasound and the RPD add cost—the ultrasound itself can cost an additional $75-$150 per procedure, and the RPD tacks on an extra $1.50 per injection. The use of ultrasound about doubles the time it takes to perform the injection. Therefore, regarding "the implications of something like this being used widespread, there obviously needs to be a cost analysis," said Dr. Park.

Dr. Park said that the utility of the new method is especially pronounced in dry joints (without effusion), where "the actual space between the cartilage and the

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RA Patients on Anti-TNF-Alpha Agents at Risk for Herpes Zoster

BY MARY ANN MOON

Rheumatoid arthritis patients who are taking monoclonal anti–tumor necrosis factor–alpha agents such as infliximab and adalimumab may be at increased risk for developing herpes zoster, according to a report.

An analysis of data from the German RABBIT (Rheumatoid Arthritis Observation of Biologic Therapy) registry, initiated in 2001 to track the long-term safety and effectiveness of biologic agents in rheumatoid arthritis (RA), showed a significant association between reactivation of latent varicella zoster virus and treatment with this class of anti-TNF-alpha drugs, said Dr. Anja Strangfeld of the German Rheumatism Research Centre Berlin and her associates.

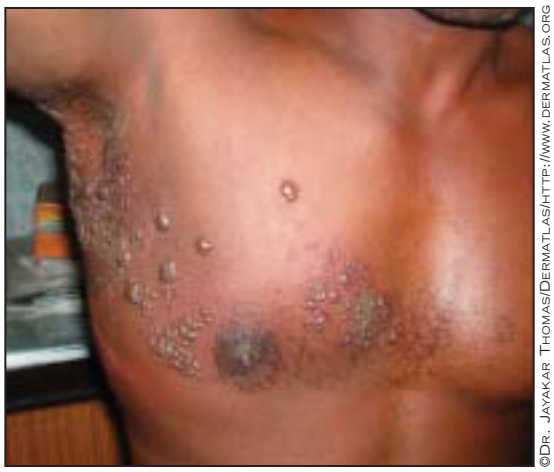
The investigators examined data on 5,040 patients who were treated in 2001-2006 at more than 150 German outpatient clinics and private practices specializing in rheumatology.

A total of 82 patients developed 86 cases of herpes zoster, including 12 cases that required hospitalization. Of these, 39 were temporally linked to adalimumab or infliximab, compared with 23 cases linked to etanercept and 24 linked to conventional RA therapies.

The incidence of herpes zoster was 11.1 per 1,000 patient-years in patients who were taking the monoclonal anti-TNF-alpha antibodies, compared with 8.9 per 1,000 patient-years for etanercept and 5.6 per 1,000 patient-years for conventional therapies.

After the data were adjusted, the risk for herpes zoster remained elevated only for patients taking adalimumab or infliximab. In a subgroup of patients who switched from conventional therapies to these anti-TNF-alpha rugs, the risk for herpes zoster increased after the switch, the investigators said (JAMA 2009;301:737-44).

The database used in this study has been supported by an unconditional joint grant from Essex Pharma, Wyeth Pharma, Amgen, Abbott, F. Hoffmann-La Roche Ltd., and Bristol-Myers Squibb Co. ■



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This 25-year-old man complained of severe pain associated with vesicles and crusts on a red base over the right fourth and fifth thoracic dermatomes.

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synovium is really small. So when we put a needle in, we're finding that sometimes we're not in the place we think we are, and we're actually injecting into subcutaneous tissue," he said. "What we can see in real time with ultrasound is the synovial space actually expanding when you put in fluid." And while he conceded that joints with large effusions (less than 10% of joint injections) may stand to benefit less from this technique, "In a joint without effusion that has collapsed down (90% of injections), it's a benefit. And that is the great majority of injections."

Ultrasound-guided injections may also benefit obese patients. "We're finding we need much larger or longer needles to get into those joint spaces. So it's been tremendously helpful in those areas."

One of Dr. Park's research colleagues, Dr. Wilmer Sibbitt, was a developer of the Food and Drug Administration–approved reciprocating procedure device, now marketed by Avanca Medical Devices Inc. He reported having no other conflicts to disclose. ■

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