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CORR Insights®: No Correlation Between Serum Markers and Early Functional Outcome After Contemporary THA

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Where Are We Now?

To date, we have been dependent upon traditional outcome measures to evaluate the different approaches to THA (SF-36, WOMAC, HSS). Recently, MRI, gait analysis, and serum makers have been

used to supplement our assessments, but the clinical relevance remains of these tools—and whether they matter to patients—remains unclear.

In their study, Poehling-Monaghan and colleagues seek a correlation between serum markers and outcomes. They found, as did we [3], that although some of the markers (CPK, myoglobin, CRP, IL-6) rose after surgery, these markers did not correlate with patient-reported outcomes. In fact, the clinical outcome measures between the two groups (minimally invasive direct anterior and posterior THA) showed minimal differences; only pain scores and distance walked in the hospital were different.

number of gaps in our knowledge remain. We need other biochemical, physical, or anatomical measures such as IL-8, IL-10, superoxide dismutase and total antioxidative capacity. The truth is, more work needs to be done.

Safety is always a major concern when considering the anterior approach. The study by Poehling-Monaghan, as well as our own [3], did not address this issue. The anterior approach appears safe in experienced hands, but does have a considerable learning curve [1, 4]. Looking ahead, we need data that measures safety objectively.

There are a number of questions that still warrant consideration. What is the best approach to THA: Anterior, posterior, or direct lateral? How do we best measure this? Should we look at outcomes using the standard measures (WOMAC, HSS, SF-36) or should we try to be more objective and look for measures of invasiveness through biochemical markers, gait analysis, imaging studies, and/or anatomical evaluations? If we look for more objective markers, how will we know whether they result in clinically meaningful (or even discernible)

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Where Do We Need To Go?

The study by Poehling-Monaghan and colleagues is commendable, but a

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differences to our patients? One thing is clear, we have no standards and until we find the measures that correlate, these questions will remain unanswered.

How Do We Get There?

Undoubtedly, we need to continue to look for objective factors that correlate with outcomes that our patients perceive and care about. At the end of the day, our outcomes matter. Patients, insurance companies, and the government want to see that outcomes are improving. Of course, with a procedure such as THA, this is hard to achieve since the outcomes are already so good.

Impartial measures such as biochemical markers clearly show a difference between the posterior and the anterior approaches but need to be correlated clinically. We have looked at basic markers of inflammation and muscle damage (CPK, IL-6, TNF), but

there may be other serum makers that may correlate. Basic science research into this area needs to be conducted. One assumes that if there is less muscle damage and less inflammation that the procedure is “less invasive” but that might not be the case and certainly may not correlate with patient outcomes. First, we need to look for other markers that could be validated by anatomical studies. There may be other serum markers that do correlate with clinical outcome measures.

Certainly, many of my questions could be answered if we could design studies that are more methodologically robust. Barrett and colleagues [2] have tried to be objective by randomization and using a prospective study design. However, we also need to be blinded. To date, there is no study that looks at clinical outcomes in the setting of a truly blinded study; this would certainly help answer one of the questions raised by this interesting article.

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