



Degree of hypercalcemia correlates with parathyroidectomy but not with symptoms[☆]



DR. JAMES OUELLETTE (Centerville, Ohio): Much of the concept of the paper appears to be looking at primary hyperparathyroidism based on the 2013 consensus review. And in there, I think it's important that we note, of course, they made recommendations for a more extensive evaluation of the skeletal and renal systems. Skeletal and/or renal involvement was determined by further evaluation and that should become part of the guidelines and, of course, more specific guidelines for monitoring those who do not meet the guidelines for parathyroid surgery. Those items, as you pointed out, and as we saw in your presentation, were the age, the calcium level, skeletal and renal issues. Certainly taking out the end stage renal disease, patients in the review of the medical record you find 2266 patients that meet your inclusion criteria. We saw that calcium and PTH levels and, in fact, only one-third or less truly underwent surgery.

So I think you do show us that by comparing the symptoms, the symptoms and the complications of hyperparathyroidism, there's really no true direct correlation with the degree of hypercalcemia, other than perhaps patients with higher calcium levels seem to get referred to a surgeon and probably had surgery. So we really see in your study, greater than 60 percent of the patients who met the criteria did not have surgery. The higher calcium levels really are the things that identify those patients that were most likely to get surgery considered.

So based on the data, the prevalence of symptoms certainly does not identify the patients, but the calcium levels do. And I think we now understand that.

I do have several questions for you in relation to all this. How many of these patients were actually evaluated by surgery and/or endocrinology? Do you believe the use of the guidelines has increased over at least the last couple of years of your cohort? And, by that, do you see any difference in the cohort that is either referred or evaluated for parathyroidectomy? Regardless, the answer to that question, what do you perceive are the barriers to screening a referral that can actually be addressed?

And then as a larger general question, do patients with any indication truly need surgery or expect to experience a benefit versus the risk of surgery? And that would mean, do you have 1600 patients at your institution who need a parathyroid surgery?

DR. YAN: So for the first question, in terms of how many patients were actually referred to surgery, the majority of the patients who get referred to surgery undergo the surgery at our institution. Just internal review, over 92 percent of patients who get referred to the

surgeon undergo parathyroidectomy for their disease. So that's nearly equal to the patients who have surgery in this study.

In terms of the adherence to guidelines over time – I actually did look to see what the surgical rates over time were, and, unfortunately, didn't really see an increase as time went on. I kind of use that as a corollary for how guidelines were being followed. In terms of barriers for referral, one thing is obviously just higher calcium levels. It becomes more noticeable to referring providers. Patients who had mildly elevated calcium levels, they may not be recognized, especially if they have elevated calcium levels and then it temporarily goes down to normal and then the primary physician thinks that's totally okay. Another thing was that patients with reduced GFR, because we found a lot, because that's a lot of our patients who were not referred. In fact, when we did a Cox regression to see what factors were associated with lack of referral, reduced GFR was one of the most common ones. And I think most likely the physicians actually were thinking those patients had secondary hyperparathyroidism. But these are all patients with elevated calcium and elevated PTH, and the secondary should have lower normal. But I think that's just part of recognition. And in terms of should all these patients with an indication undergo surgery, I guess from a bias point of view and as a budding endocrine surgeon, I would say yes. But, I mean, in all truth, most of these patients are not at terribly high risk for undergoing the surgery. There's one study from San Francisco which showed that out of like 50 octogenarians who had parathyroidectomy, only five of them had complications. Even then, it was complications of UTI and seroma.

DR. CHRISTOPHER R. McHENRY (Cleveland, Ohio): I'm continued to be amazed, and it's so remarkable that the large percentage of patients, even with established indications for surgery, are not undergoing surgery, and I share your comment. I think all patients with primary hyperparathyroidism at least ought to be considered for surgery. Actually, I have a short question. Did you have any data regarding duration of hypercalcemia and symptoms? And then, finally, I wasn't clear about how your patient population was identified. Where did your cohort come from?

DR. YAN: So the first one is, no, I don't have the duration. In terms of how these patients were captured, it was through one of our research assistants using a computer algorithm to basically find all patients within that time period who at least had an elevated calcium with an elevated PTH. So that's how we were able to capture patients who were never referred to surgery.

[☆] Presentation given by Huan Yan, M.D.