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Smriti Patodia: Hello, and welcome to In Conversation With, a podcast from The Lancet Oncology. It is July 2026, and I'm senior editor Dr. Smriti Petoria. Today, I'm joined by Dr. Hans Merks from the Princess Maxima Center in the Netherlands to discuss the European guidelines for imaging of primary pediatric and adult osteosarcoma and Ewing sarcoma published in our July issue.

In this policy review, Hans and colleagues present harmonized European recommendations for the imaging of bone sarcomas, fulfilling the requirement for a methodical, systematic, and unified approach to the diagnosis, treatment response, and post-therapy surveillance of osteosarcoma and Ewing sarcoma. So without further ado, I'd like to welcome Hans.

So Hans, thank you for joining me today.

Hans Merks: Happy to join.

Smriti Patodia: I'd like to start by asking you, what role does imaging play in the journey of patients with osteosarcoma and Ewing sarcoma, right from diagnosis and staging through to response evaluation and follow-up surveillance?

Hans Merks: If, if you start with the initial disease staging phase, there, there you really want to define what's the extent of the tumor, what's the relation of the tumor to important structures, uh, and that in a sense determines your route of biopsy.

But also for the oncologist, it, it, it adds to, importantly adds to the risk stratification for the patient. Then once the patient has started, you come to, to the, to the second stage, evaluation of treatment response. In the end, after systemic therapy, after neoadjuvant chemotherapy in, in Ewing sarcoma and osteosarcoma, you want to choose your optimal local therapy.

So there you definitely need new imaging to make a final joint decision, shared decision on the optimal local therapy. But maybe as important, we, we do want to know how the patient responded to the systemic therapy, uh, that has been started, so to the neoadjuvant chemotherapy. So we do need like surrogate

endpoints, uh, for treatment efficacy to decide whether, uh, the patient responds well to treatment, yes or no, and that's on a patient level.

But on a trial level, we would love to know early on if a new treatment does work, yes or no, to be able to, to pick a winner, uh, treatment and to early drop a new strategy if we think it's, it's not going to, uh, uh, reach its end goals. And then once the patient has finalized treatment, uh, there's the era of post-treatment surveillance, where we think that early detection of relapse, uh, might help to improve survival, and that's also a period when we, where we frequently use imaging during a quite long period of time.

So those are the three phases with the different questions for imaging.

Smriti Patodia: Why was there a need for these European guidelines? What problems in current practice of sarcoma imaging are you trying to solve with this guideline?

Hans Merks: So like I said, imaging is essential at all the different stages like we, we just discussed in the patient journey.

But we felt there's, there's quite some heterogeneity around across Europe, across different centers and, and countries in what imaging is being used. And this lack of international consensus makes also that it's very hard to build up the evidence to underpin the optimal imaging strategy, which is so crucial during the patient journey.

Smriti Patodia: Can you briefly take us through the methodology of this policy review? How was the international panel selected? How was data extracted and analyzed for the purpose of the systematic review, and how were the recommendations generated?

Hans Merks: This, this is a really a multidisciplinary, uh, collaboration between specialists from, from important international organizations.

One is the EuroEwing's Consortium, that, uh, is a, an organization of all professionals, but also patients and parents Uh, involved in, in, in Ewing sarcoma. There's the Foster Consortium dedicated to osteosarcoma, European Society of Pediatric Radiology, and the European Association of Nuclear Medicine. We all came together, and there's a strong incentive to come up with a European guideline.

And, uh, so we decided this needed to come from these four organizations all together, and we needed experts from a-across Europe re-representing radiology, nuclear medicine, pediatric oncology, medical oncology, orthopedic surgery, ra-radiotherapy. And because this is a-- something that's really , it's all about guideline development, we also needed guideline methodology specialists and also epidemiologists to support us, uh, us in, in, in, in, in taking the proper routes to come up with the optimal guidelines based on all the evidence that's in, in literature.

So we set out by defining twenty-three important clinical questions we had, and that's, for instance, to give you one example of a question, what's the diagnostic accuracy of FDG-PET/CT scanner diagnosis for Ewing sarcoma compared to a bone scan? And in that sense, there's like twenty-three questions throughout the, the three stages of the patient journey.

We came up with very precise clinical questions, then defined a search strategy, uh, meticulously defined the in and exclusion criteria, did a search in PubMed. So in the end, over two thousand articles were identified by our search strategy. Seventy-two after double screening appeared eligible for full text screening, and in the end, thirteen papers were included for the, uh, systematic review.

Those thirteen papers were meticulously extracted, uh, for all different aspects, and that resulted in a summary of the evidence. Then based on the summary of the evidence, we held multiple meetings with the entire panel of experts, so the thirty-six experts, uh, for each question to bring together the evidence that's there in the literature and then the expert opinion of people present in the panel, and we took many things i-into account.

So on the one hand, it's, uh, the strength of the evidence, but it's also expert opinion. It's practical considerations, including availability of, of imaging modalities, patient burden, radiation exposure, and costs. So that way we came from the evidence to clear recommendations and at the same time, like I said, we identified knowledge gaps that need additional research and that should be prioritized in the next studies.

Smriti Patodia: Please tell us briefly about the recommendations that were developed by the international consortium. If the clinicians in our audience were to only remember one or two take-home messages from these guidelines, what would they be?

Hans Merks: Maybe like already said at the start of this interview is, is that the evidence base for all the different stages in the patient journey concerning imaging is really insufficient.

And the, the current imaging standards are the results of a gradual evolution where often without formal testing, new modalities are introduced, and we accept as a new reality, whilst there's hardly any evidence underpinning what we're doing. So that's one thing. The other important message from this guideline is that if we do harmonize our imaging across Europe, we'll be able to answer many of those questions and come up with a much more optimal imaging strategy across, uh, Europe.

And that will, um, at the same time optimize patient care throughout Europe and concurrently lead to the evidence underpinning the most optimal imaging strategy. So that's may-maybe a very broad take home message.

Smriti Patodia: Finally, I'd like to end by asking, in your view, what are the most urgent research questions for the next generation of studies on this topic?

What would truly move the needle forward?

Hans Merks: A very important question from the bone sarcoma imaging research field is that apart from survival, we don't have any surrogate endpoints in trials testing new treatments. So a very urgent question is that we need to come up with imaging biomarkers where we can find early signals, uh, that predict outcome, and in that way, we will be able to much more optimally treat the individual patient.

But also on a trial level, we will be able to early pick a winning strategy and continue from phase one to, to three. Whilst if you, if you're quite early on sure that a treatment will not make an important difference in the end, you might drop that treatment and start with, with the next promising treatment.

So there's an urgent need for early imaging biomarkers to help us proceed and progress in sarcoma treatments much more rapidly as current response measures, for instance, uh, volume or one D response measurements are, well, quite useless in, in, in bone sarcoma trials. The second most pressing issue remains post-treatment follow-up imaging because there's no high-quality evidence supporting specific imaging frequencies or modalities.

Well, whilst we, we do find some evidence that post-treatment surveillance might add to survival, it's a huge burden on patients looking at scan-related

anxiety, hospital visits. It's a huge burden for the healthcare system, and we don't know precisely what it really adds to survival in the end. Whilst the burden is immense, we don't know what we should do, precisely what kind of modalities we should use, and we don't know what frequency is optimal.

So that's the second most urgent question we should answer.

Smriti Patodia: Thanks, Hans. I'd like to ask one more question, if you don't mind. How can these guidelines be generalized to the rest of the world?

Hans Merks: Yeah. Well, we do realize that this is a guideline for relatively high-income countries. That, that's an important point you make.

And we also realize that things need interpretation if you go to different part of the, of the globe, where there might be certain endemic diseases that could change the imaging first choice. So you should interpret those things according to, well, changes in epidemiology that might occur because of racial differences, endemic diseases, et cetera.

But I think for high-income countries, this is an important basis, I feel. But of course, you need to adjust to, to those, the factors I, I, I just mentioned.

Smriti Patodia: Thank you very much, Hans, for talking to us today. It's been an absolute pleasure speaking with you and getting your insights on this important publication.

Thank you for listening to In Conversation with The Lancet Oncology. If you enjoyed this episode, please leave a review on Apple Podcasts or Spotify, and subscribe to stay updated on our latest research and conversations. I'm your host, Dr. Smriti Patodia. Our editorial team includes Editor in Chief David Collingridge, Deputy Editor Cheryl Lai, and Senior Editors Carrie Fielden, Jamie Prowse, Cheryl Reeves, and myself.

This program is a part of The Lancet In Conversation With series, and is produced by Matthew Simonetti. Stay tuned until next month for our August issue podcast. Thank you for listening, and goodbye