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A Global View of Oncofertility: Lessons Learned from Around the World

Dr. Sands:
Cancer treatment can impact fertility outcomes for individuals throughout the U.S. as well as around the globe, and as providers, what can we learn from oncofertility efforts from other countries around the world?

Welcome to *Project Oncology* on ReachMD. I'm Dr. Jacob Sands and here to explore global viewpoints on the field of oncofertility is Dr. Yasmin Jayasinghe. Dr. Jayasinghe is the Director of the Oncofertility Program at the Royal Children's Hospital. She is also a Gynecologist at the Royal Women's Hospital in Melbourne, Australia. Dr. Jayasinghe, thank you for being here today.

Dr. Jayasinghe:
Thank you so much for having me. I'm delighted to be here.

Dr. Sands:
Dr. Jayasinghe, let's focus on the Oncofertility Consortium, an interdisciplinary initiative to study fertility in survivors of cancer. Can you tell us about this organization's efforts to improve oncofertility around the globe?

Dr. Jayasinghe:
Honestly I would describe the Oncofertility Consortium's efforts as being quite heroic, led by Teresa Woodruff initially and now Dr. Mahmoud Salama. It's a multi-disciplinary organization, extremely collaborative, quite an altruistic organization. It comprises members from forty-five different countries. There are over a thousand members in this organization now, and there are several centers offering a breadth of oncofertility expertise in all areas, actually. So you've got members that are involved in the basic science, and then you've got members involved in implementation of clinical care and education and research. So it's a wonderful resource. Being in Australia, in my center, we were the first organization to implement an organized oncofertility program and it was wonderful to be able to reach out to the Oncofertility Consortium. Basically it's a feeling of support and collegiality, there's shared resources, and it's a place that really facilitates rapid dissemination because there's so many members from around the globe and it means that the best practice can be implemented as fast as possible internationally.

Dr. Sands:
Are you able to outline some of what you're doing within the consortium?

Dr. Jayasinghe:
Yes. So the consortium has several different committees focusing in different areas. I belong to the Practice Committee of the Oncofertility Consortium and our focus is to support the implementation of Vision 2030, which is the oncofertility strategic plan over the next ten years. So what we do is we look at areas of unmet needs and we're keen to do shared collaborations in that area in terms of discovery and then providing practice opinions and implementation into practice.

I'm also a member of the Pediatric Initiative Network, which is a committee comprising pediatric providers around the U.S. and now around the globe. At the Children's Hospital, we've developed a decision aid that helps parents make decisions with their children on oncofertility. I know that there's work being done in the U.S. with Leena Nahata who heads the Pediatric Initiative Network.

Dr. Sands:
For those just tuning in, you're listening to *Project Oncology* on ReachMD. I'm Dr. Jacob Sands and I'm speaking with Dr. Yasmin Jayasinghe about the global landscape of oncofertility.

Dr. Sands:

I wanna transition now in acknowledging within the past couple years, of course, COVID-19 has made everything more challenging within healthcare and within society, this has made things more challenging in collaborations, as well. So I'm curious, based on your experience, how has the pandemic impacted oncofertility counseling and fertility outcomes?

Dr. Jayasinghe:
So probably one of the most important things is to say that we know that the impact of cancer treatment on fertility, it's not reversible. So we were really pleased to see that governing international bodies deemed fertility preservation an essential service. So that continued during the COVID pandemic. That meant that lots of organizations similar to my organization at the Children's Hospital, we had to develop business plans specific for the COVID era really. And that can be quite challenging because that's occurring during a time when there's limited organizational capacity.

The first thing that we did was we implemented more frequent multi-disciplinary meetings. And I work in pediatric oncofertility but even though it's pediatric-focused, it's very important to have intersectoral collaborations. So in our center we do fertility preservation counseling and procedures on-site in the pediatric setting; we've spent a lot of time upscaling oncology providers and gynecologists and pediatric endocrinologists in terms of how to do that. The pediatric surgeons and the pediatric gynecologist both they do the pediatric fertility preservation procedures on-site and then a scientist will collect the tissue and it will be processed in an IVF lab. Those IVF labs are accredited and so they're based in an adult center. So the whole discipline of oncofertility is very collaborative, intersectoral, it requires rapid mobilization of teams very quickly upon cancer diagnosis to implement this care before cancer treatment starts.

We have to also think about the impact of COVID on the reproductive tissue that we're collecting. You know, we asked families if we could set aside some tissue that we collected, either testicular tissue or ovarian tissue, for future COVID testing. What happens when we take tissue from children for fertility preservation, or adults for that matter, a little tiny bit of that tissue gets sent to the histopathology lab to ensure that it's normal architecture, that there's no malignancy in the tissue, for example. And the rest of the tissue is cryopreserved for future fertility. So we were asking permission to take a little extra sample to store in the freezer for future COVID testing.

Dr. Sands:
And looking to the future, Dr. Jayasinghe, you've mentioned some things that you consider experimental at this time but how do you think emerging research and developments in the field of oncofertility will impact fertility outcomes for patients with cancer going forward? Is there any aspect of what you're most excited about or what you'd like to highlight?

Dr. Jayasinghe:
Yes, I think one area that is incredibly exciting is the issue of in vitro maturation of immature eggs to immature follicles to actually mature eggs and also maturation of testicular tissue into sperm. I think those areas are progressing very, very, fast. The reason why this is so important is that it's almost the last frontier in oncofertility. I mean I say that, but we're always going to find new frontiers, but this is really a very important area.

When we collect tissue, if it has any malignancy in it, we wouldn't be wanting that tissue to be auto transplanted back into that patient's body into the future because of the risk of malignant reseeding. So this poses a real problem for example, for children with leukemia, you know, bloodborne cancers. So there's a lot of work being done on taking that tissue to see if we can mature the eggs outside the body. When we collect tissue, the tissue's got immature eggs in it and immature eggs can't be fertilized, we need mature eggs for fertilization. So being able to mature those eggs outside of the body means that a single egg, for example, can be used in IVF for future parenthood, and that an egg doesn't have malignancy in it because it's a single cell. So I think in vitro maturation is a very, very important area, particularly for children with leukemia, which is a very common cancer in children.

The other thing that work is being done on trying to clear leukemia cells from tissue being obtained and I think that's an incredibly exciting area, as well. It means that we can safely offer fertility preservation to a larger group of children. A lot of centers are already collecting that tissue now. I mean, our center we do offer fertility preservation to children with leukemia.

The other area that's very, very exciting is the work that's being done on maturation of testicular tissue and that holds real promise for a young boy that might save their testicular tissue now in the hope for parenthood and I'm very excited to see those two areas flourish.

Dr. Sands:
Well with that forward-looking perspective in mind, I want to thank my guest, Dr. Yasmin Jayasinghe, for joining me today and sharing insights on global developments in the field of oncofertility. Dr. Jayasinghe, thank you so much for joining me.

Dr. Jayasinghe:
Thank you so much for having me. It's been a pleasure.

Dr. Sands:
I'm Dr. Jacob Sands. To access this and other episodes in our series, visit ReachMD.com/ProjectOncology, where you can Be Part of the Knowledge. Thanks for listening.