



The Costs of Hope

One of my responsibilities at work is to counsel young adults about fertility preservation. It is a bittersweet responsibility. When I meet with young people, their anxiety is a distinct presence in the room. They have just been given a life-threatening diagnosis, and most have little experience in dealing with such adversity. Then they are asked to think about something that for most is hypothetical at best and far from their reality. The information I have to give them is complex and something

cal. Creating an embryo after fertility preservation is not a simple process. Most fertility specialists today use a procedure called intracytoplasmic sperm injection (ICSI). ICSI involves injecting a single sperm into a mature oocyte; it is indicated where male infertility is the factor in couples unable to conceive naturally. It has obvious benefits in cancer survivors—if the survivor is a male, he will have banked a finite number of sperm, and using just one sperm to create an embryo with a partner's egg may

be more successful than traditional insemination of the partner. If the survivor is female, she will have frozen a limited number of eggs, and using ICSI theoretically improves the chances of fertiliz-

ing her limited sample of eggs. However, the success rate of these procedures is not 100%, or even close to that. A recent study reported a pregnancy rate of just 37% for female cancer survivors and a 30% live birth rate (Cardoza et al., 2015). A study from researchers at the Centers for Disease Control and Prevention (Boulet et al., 2015) reported that the use of ICSI has more than doubled from 1996–2012. The outcome is not all that rosy—there is a 1.5–4 times increased risk of chromosomal abnormalities, birth defects, intellectual disability, and autism in children born after ICSI as compared to conventional in vitro fertilization (IVF). I talk about the costs with the patients who are referred to me. Every single time I have had the discussion, the response is usually a blank stare followed by a question about financial support. Depending on where the patient lives, there may be some financial support—or not. Some young patients have parents who can afford to pay for the procedures and medication costs, but other patients do not want to ask their parents or know that their parents could not afford it. I counseled a young woman who was undecided about ever having children, but her diagnosis of colorectal cancer at 25 years old caused her to reconsider. A glance at the fee structure at our local fertility clinic made up her mind; it was not to be. A young man recently diagnosed with lymphoma described his lifelong desire to be a father—and he blanched at the costs of sperm banking, but then decided that he would take the money he and his fiancée were saving for their summer wedding and use it for this; he did not want to talk about what would happen when he wanted to use his frozen sperm.

The hope and promise of assisted reproductive technologies is just that—hope and promise. But is hope and promise better than the certainty of a life without biological offspring? If we speak honestly to our patients about the 30% chance of a live birth, are we taking away hope and promise? As carefully as I word my counseling, I am most often left with a sense of unease after the conversation. As a Canadian nurse, I never have to talk about money with my patients, except in this circumstance. Perhaps this plays into my discomfort talking about something that costs more money than most young people have now, or even dream of having one day. In the back of my mind is the question about my desire to offer hope to these young people and whether offering hope in the form of expensive fertility

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quite foreign. Most 21-year-old men are not thinking about their fertility, and talk about sperm banking often makes them blush. As a sexuality counselor, I am used to sensitive discussions, and we get through “the talk” with some judicious humor and not much eye contact. The discussion is often more complex with young women. The necessary procedures are lengthy, invasive, and costly. The talk is not only about sensitive matters, but also about spending money up front with an uncertain future and uncertain promise about the ultimate success of fertility preservation. Therein lies my quandary.

Fertility preservation costs a lot of money. It is rarely covered by insurance, and most young people do not have nearly enough money to cover the costs. In addition, banking sperm or oocytes is just the beginning. The costs of using the preserved sperm or eggs are astronomi-

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preservation with limited success is ethical. I also feel strongly that we need to counsel these patients, and nurses are ideally suited to this responsibility. But at what cost—hope?

References

Boulet, S., Mehta, A., Kissin, D., Warner, L., Kawwass, J., & Jamieson, D. (2015). Trends in use of and reproductive out-

comes associated with intracytoplasmic sperm injection. *JAMA*, 313, 255–263. doi:10.1001/jama.2014.17985

Cardozo, E., Thomson, A.P., Karmon, A.E., Dickinson, K.A., Wright, D.L., & Sabatini, M.E. (2015). Ovarian stimulation and in-vitro fertilization outcomes of cancer patients undergoing fertility preservation compared to age matched controls: A 17-year experience. *Journal of Assisted Reproduction and Genetics*. Advance online publication.

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