New Advances in Gynecological Health Before and After Cancer

National Teleconference & Webinar Transcript

Wednesday, July 11, 2012

Presented By

Sharsheret – Your Jewish Community Facing Breast Cancer

With generous support from
Julius and Emmy Hamburger Memorial Fund
Ruth Small Memorial Fund
Stephanie Sussman and Ann Nadrich Memorial Fund
The Gorlin Family Foundation

TABLE OF CONTENTS

I. Introduction
Shera Dubitsky, MEd, MA, Clinical Supervisor, Sharsheret

Shera Dubitsky: Thank all of you for joining us this evening for Sharsheret's National Teleconference on New Advances in Gynecological Health Before and After Cancer.

I am Shera Dubitsky, Sharsheret's Clinical Supervisor.

Sharsheret is the Hebrew word for chain. We are a national not-for-profit organization that supports young women and their families with all Jewish backgrounds facing breast cancer. We are offering support to young Jewish women facing breast cancer in every stage, before, during and after diagnosis. And we are helping women to connect to a community in a way that feels most comfortable. We take into consideration stage of life, diagnosis or treatment, as well as their connection to Judaism. We also provide educational resources, offer specialized support to those facing ovarian cancer, or at a high risk of developing cancer.

We decided to explore this topic after hearing from many of you about your concerns and questions on fertility, pregnancy, nursing, the impact of hormone replacement, bone health and of course for many of you early onset menopause. We will also discuss the latest research and current studies for gynecological being regarding cancer related issues. I recently spoke with a 36 year old woman who faced many of these issues after she was diagnosed with breast cancer. Her surgeon suggested, because of her ethnicity, she undergo genetic testing prior to surgery. When she asked the surgeon what her ethnicity had to do with anything he replied "Well, don't you know that as an Ashkenazi Jewish woman you are more at risk of carrying the BRCA mutation?" So she paused and said "Oh, well what if I convert?"

This woman opted to undergo a bilateral mastectomy and eventually a hysterectomy. Now, although she was prepared to do the surgery, she had a difficult time wrapping her brain around the impact of all of this. Prior to her diagnosis, she and her husband intended to have more children. She wanted to know her options prior to having any surgery or treatment. She experienced what we call anticipatory grief, imagining many losses and life changes that were ahead of her. She mourned the loss of never being able to breastfeed again, even if she were to have a baby. She worried how all of this could change her relationships and her community. Experiencing menopause at 36 would change her intimate reactions with her husband. Seeing her peers pregnant and nursing would also be painful. Who would she speak with about the hot flashes, mood swings and change in libido? Certainly, not her young peers. She imagined sitting around with her mom's friends who were in their late 50's and early 60's sharing menopause stories. She visualized all of them laughing and whimsically trading stories about the change of life. She stares straight ahead, lost in space in her hot and sexy 36 year old body. And this visual while sad, remarkably had her laughing.

As Jewish woman, the impact of gynecological health adds a deeper dimension with greater impact. As I mentioned earlier, individuals who identify as Ashkenazi Jews are at an increased risk of carrying the BRCA mutation and more likely to get prophylactic mastectomies, oophoarectomies or hysterectomies. Also, family is the center of Jewish life. Losing the option of having children or expanding your family is particularly difficult for those who embrace this value and/or live in a community that embraces this value.

Maimonides, the great Torah scholar and physician of the 12th century, wrote "It is a Jewish value to maintain a healthy body. Therefore one must accustom oneself to things that strengthen and make one healthy." I believe that one of the ways to strengthen ourselves is by attaining information. Our goal tonight is to provide you with information that can validate your experience, offer you guidance to use as a springboard for future conversations with your medical team. After we hear from our esteemed panel of speakers, we will open the phone for questions and answers.

Our first speaker is Dr. Tessa Cigler and she is very accomplished. Dr. Cigler is a medical oncologist at the Weill Cornell Breast Center. She provides personalized and comprehensive care addressing issues such as diet, exercise, fatigue, anxiety, bone health and hormone mediated symptoms. For her younger patients, options for fertility preservation are carefully considered as the treatment plan is formulated. As a member of the Weill Cornell Breast Cancer Research Team, she has had clinical trials designed to provide her patients to access to the newest and most promising options for therapy. She is a member of the American Society of Clinical Oncology and the New York Metropolitan Breast Cancer Group. She is the author of several journal articles and book chapters. Dr. Cigler has previously presented on a Sharsheret teleconference. She sits on Sharsheret's National Survivorship Advisory Board offering guidance and input on our survivorship program that we will be launching in the fall. We are very privileged to have her join us this evening. Dr. Cigler, the floor is yours.

II. Gynecological Health and Breast Cancer
Tessa Cigler, MD, MPH, Weill Cornell Breast Center

Hi there. Good evening, everyone. Thank you for joining. It is my pleasure to be speaking tonight. I am going to give you all a whirlwind tour of gynecologic health and breast cancer. I feel like it could be a three hour talk as there are many slides, but I am going to talk quickly and we'll hopefully touch on many of the points.

As everyone here probably knows, breast cancer is the most commonly diagnosed cancer for women in the U.S., accounting for over 50% of cancer diagnosis.

What many women don't know is that breast cancer is not just a disease of older, post-menopausal women. The slide I like to show is data from our center at Cornell and you see that about 50% of women diagnosed with breast cancer in our center are between the ages of 40 and 59; and 7% were actually under 39 years of age.

National data shows that of women diagnosed with breast cancer, 6% are younger than 40 years of age and 25% are younger than 50 years of age, which means a really large percentage of women diagnosed with breast cancer are still pre-menopausal.

There are many gynecologic issues associated with the diagnosis of breast cancer that affect both pre-menopausal women and post-menopausal women. Some of them that we'll be talking about tonight. We will spend a long time talking about fertility and pregnancy issues. The risk of infertility, options and fertility preservation and what about breast feeding and what about a pregnancy after breast cancer and, of course, breast cancer that is diagnosed during pregnancy. A big gynecologic issue is hormonal therapies that we use to treat and prevent breast cancer and we will talk about their side effects and management options. We'll touch on the role of hormone replacement and all contraceptive health. I will also speak briefly about bone health.

National guidelines really recommend that the oncologist discuss fertility early in the treatment planning of a diagnosis of breast cancer.

The national guidelines for the American Society of Clinical Oncology has published some take home points for physicians on fertility. These guidelines stress that many types of cancer treatments can affect a person's fertility offering various options to help preserve fertility in both men and women. Before treatment begins it is really important for the oncologist to speak about these fertility side effects with the patient.

What about chemotherapy and fertility? Well, almost all chemotherapy programs do decrease ovarian function. What women need to know is it is really common for them to lose their menstrual periods or become irregular during chemotherapy and this does not mean that they will remain permanently in menopause. Periods often resume 6 to 12 months after the completion of chemotherapy.

The rates of infertility depend upon the specific drug regiments that are used to treat breast cancer, the cumulative doses, meaning how many cycles a woman receives and also the age at treatment. Women under 35 should know that the rates of infertility with almost all chemotherapy agents are very, very low.

Some guidelines as to what regimens are high risk treatments and which are particularly high risk causing infertility and those that are lower risk and unknown risk. CMF is a common regimen, particularly in women over 40. There is a large percentage that can cause permanent amenorrhea or infertility. Most of the regimens we use fall into the intermediate risk and obviously this is stratified by age. So with women under 40, the risks tend to be low and women over 40 - the risks tend to be much higher. The taxanes which are now being used more for breast cancer, the risks are not really clear as to how taxanes affect fertility and trastuzumab commonly known as herceptin is an antibody treatment and, again, we are not sure how that effects fertility.

This slide I'm not going to go over in detail, but it shows again is that the risks cause infertility have a lot to do with age. With risks of infertility higher in women over 40 than in women under 40.

This is a chart of one of the most commonly stated journal articles talking about the risks of infertility with chemotherapy treatments. This chart looks at how many women resume normal menstrual cycles after chemotherapy. You can see the top line is women who get no chemotherapy for the control group and all the other lines are various ages of women undergoing chemotherapy. As you can see, every age of women develops - their periods slowdown in the first few months after receiving chemotherapy and by 12 months after chemotherapy for women less than 35 years of age. Their risks of their periods are almost as regular as women who haven't undergone chemotherapy and the periods for women 35 to 40 years of age 50% or so do lose their periods and women over 40 even a higher percent lose their periods.

The next slide is a similar slide, similar graph but it just shows the rate of resuming normal periods according to chemotherapy regimens. With the AC, the second line from the top being a very commonly used chemotherapy treatment causing less than 50% of women to lose their periods. And another commonly used regimen, CMF, which is one of the bottom lines, causing a higher percentage of women to lose their periods.

What about hormonal therapies and infertility, tamoxifen infertility. It is a common misconception among many physicians and many women that tamoxifen itself puts

women into menopause and that is not true. Tamoxifen is not known to directly decrease fertility, although some data is lacking. It is important to note that tamoxifen is a taratogen that has damaging effects to the fetus, so women should really be careful not to get pregnant on tamoxifen. Another important point is that although many women think tamoxifen itself decreases fertility it is probably not the drug, but the fact that women are on tamoxifen for several years. It is probably just having to wait several years to try for a pregnancy that decreases the risk of fertility among all ages.

So what are some other options for fertility preservation? We are lucky that in 2012 we have had many more options for fertility preservation than in years past.

A standard option is embryo cryopreservation. This in a sense is a woman undergoing a cycle of IVF in vitro fertilization or ovarian stimulation to harvest eggs. Those eggs are then fertilized with sperm and the embryos are frozen. So embryo cryopreservation requires about 10 to 14 days of ovarian stimulation at the beginning of the menstrual cycle. And so you can see depending on when a woman is diagnosed according to a menstrual cycle, this can cause a delay in treatment anywhere from two to four weeks and sometimes longer. Embryo cryopreservation is the most effective way of fertility preservation and is an outpatient procedure. Because it would require a woman to either have a partner with sperm that they want to use or to obtain donor sperm, it costs about $9,000 per cycle and this is almost always not covered by insurance and about a $1,000 a year for storage.

For women who don't have a partner for sperm or are not interested in obtaining a sperm donor oocytes on their own can be cryopreserved. It requires the same preservation as embryo preservation. The success rate of those eggs being frozen and successfully thawed down the road to create a successful pregnancy is much, much smaller. Techniques are improving so more women are freezing oocytes and there have been 500 live births to date using oocyte cryopreservation. I think this is a technique that is getting better in the future will continue to get more and more successful.

This is a quick slide to show that there have been advances in ovarian stimulation and many centers around the country actually use an anti-cancer agent one of the anti-aromatase inhibitors as part of the stimulation regimen for women who have diagnosis of cancer. With these medicines the levels of estrogen don't go as high as they usually do with stimulation and we have had lots of success using these protocols.

What about other options for women who aren't interested or don't have the time or the means to undergo ovarian stimulation? There are always donor egg possibilities down the road for adoption and other techniques such as ovarian tissue cryopreservation which is being studied. It is not currently available, but I think it might be in the future so stay tuned.

Women ask is it is safe to become pregnant after a diagnosis of breast cancer. With all of the available data to date suggesting that there is no increased risk in recurrence with the subsequent pregnancy. A recent study published suggests that 334 women who had a diagnosis of breast cancer who got pregnant with 874 matched controls who had breast cancer who did not become pregnant and really the study was quite reassuring that there was no higher rate of recurrence among the women who became pregnant.

I like to show this chart. It shows the studies to date, and I caution people there have been only a few studies to date. All of the studies to date show that long-term survival is not affected. Long-term survival for breast cancer is not affected by a subsequent pregnancy.

In fact, some studies show that getting pregnant after diagnosis of breast cancer has a protective effect. We don't advise women to become pregnant for this protective effect and I warn people that data is very limited and also to be aware of the healthy mother effect. This is the notion that those women who are becoming pregnant are a self-selected group of women who are doing well, which might bias the data to some effect.

Women in my practice often ask me "how long do I need to wait after my diagnosis of breast cancer to try for a pregnancy". This is a very complicated decision that needs to be made in conjunction with one's medical oncologist taking a lot of factors into account. But in general we really advise waiting at least two years after a diagnosis of breast cancer before trying for a pregnancy. For women who are on tamoxifen we say you need to be off of tamoxifen for at least two months. For women who are receiving chemotherapy, you need to wait at least six months after receiving chemotherapy.

In general what do we advise patients about pregnancy after breast cancer? There is no evidence that pregnancy adversely affects prognosis and the parents should realistically consider the prognosis and effect on the family and we do say wait two years.

Breast feeding after a diagnosis of breast cancer. There is really limited data on this. There are some reports of women having success rates of about 30% after diagnosis of breast cancer. Why is it difficult? While irradiated breasts really have little or no milk production, obviously a mastectomy breast is not an option and it is very challenging, as many of you know, to nurse with just one breast. We caution people not to even think of breastfeeding, obviously during chemotherapy, as well as while receiving hormonal therapy.

What about women who are diagnosed with breast cancer during pregnancy? This is not as uncommon as it sounds. Breast cancer is one of the most common malignancies diagnosed during pregnancy with rates as high as one in 3,000 pregnancies.

Management of a pregnant patient depends on the stage of the pregnancy, the stage of the cancer and the wishes of the parents. It is important that surgery not be delayed. Remarkably, it is safe to give certain chemotherapy drugs during pregnancy. We wait until the second or the third trimesters and again the data to date, remarkably shows no long-term health concerns for the children who have been exposed to chemotherapy in utero.

So how about the hormonal therapies? The hormonal therapies we use to treat breast cancer have a lot of side effects many of which are gynecologic in nature.

There are two types of hormonal therapies that we use to treat breast cancer; aromatase inhibitors, Letrozole, Anastrozole and Exemestane are the three used in a clinical setting. These are easily used in post-menopausal women only and tamoxifen, which has been around for a long time, we use tamoxifen to treat and prevent cancer in pre and post-menopausal women.

One of the side effects of tamoxifen and aromatase inhibitors, both can really cause menopausal symptoms. Again, it is important to note that tamoxifen doesn't induce menopause, but it can make women feel like they are going through menopause again. Tamoxifen is associated with an increased risk of blood clots and uterine cancer and it has a positive effect on the bones as a bone strengthening agent. The aromatase inhibitors in addition to the menopausal symptoms can cause joint pains and a potential for the worsening of the bone density.

What are some of these menopausal symptoms that we are talking about? Women report hot flashes and night sweats as some of the most common. Women describe cognitive issues, mood swings, change in libido, vaginal dryness, weight gain and weight redistribution.

I like to show this slide because I find it reassuring. The slide is from a large study of thousands of women, healthy women with no breast cancer who were randomized to Tamoxifen or to placebo of a sugar pill with the idea to see if Tamoxifen would prevent breast cancer. You can see that the endometrial cancer risk among women treated with Tamoxifen for women under 50 years of age, the rate is really about the same for women who took placebo or Tamoxifen and it is about one in a thousand women. Post-menopausal women, women older than 50, the rate of uterine cancer did increase in the Tamoxifen group to about three in a thousand. The data is similar with blood clots and strokes showing a very, very low risk of this in women under 49 years of age and has a slightly increased risk in women over 50 years of age, but the risk is still small.

So what to do for vaginal dryness, which is a very common complaint of women undergoing treatment of breast cancer. We do recommend trying over the counter lubricants first, such as Replens or Astroglide are some brand names that we have had good luck with. What about vaginal estrogen? We do say yes if it is absolutely needed and we do tell women to use it as infrequently and as sparingly as possible.

How do we manage hot flashes? There is a medication called Effexor. It is an antidepressant medication and when given in really small doses, doses that are probably be too small to treat anti- depression, low dosage really can significantly decrease hot flashes and night sweats in a group of women. Some women have had success with over the counter items like magnesium and evening primrose oil and we counsel our women to really avoid soy or estrogen based supplements.

What about hormone replacement therapy or oral contraceptive pills.

We know from the large WHI trial that was published in 2002 that had 16,000 women randomized to placebo or hormone replacement. These were post-menopausal women and the trial really ended early because of an increased breast cancer risk.

Based on this study and this knowledge, we really don't recommend women to go on hormone replacement therapy after a diagnosis of breast cancer. Similar with the birth control pill, there is data surrounding use of the oral contraceptive pill and breast cancer risk is very controversial and some studies do show an increased risk and many studies don't. We tend to be conservative and we do not recommend women continue the birth control pill after the diagnosis of breast cancer. We counsel our women to use non-hormonal methods of birth control instead including condoms, diaphragms and many women choose IUDs.

What about bone health? Bone health is important for women. Bone health is negatively impacted by early menopause, as well as by treatment with aromatase inhibitors.

How do we protect the bones? We monitor bone density with dexa scans closely. We advise all women who are post-menopausal and women on certain treatments to be very good about calcium and their vitamin D and sometimes we have to prescribe bisphosphonates for osteoporosis.

Bisphosphonates and breast cancer are a topic of really exciting research going on. There is a lot of thought that the bisphosphonates itself, medicines that are used to treat osteoporosis, actually influence tumor growth.

I'm going to tell you about one slide that looks at an intravenous form of a bisphosphonate, alendronic acid, which was added to chemotherapy for women with breast cancer, and the study of about 2,000 pre-menopausal women. It was exciting in that it showed with the addition of the bisphosphonate; it decreased the risk of breast cancer recurrence.

There are many ongoing studies assessing the role of bisphosphonates in breast cancer. I'm going to end here by saying we have really come a long way with gynecological issues surrounding breast cancer. We have better ways to manage the side effects. We have better options for fertility preservation and cosmetic outcomes from surgery, which help as well. Thank you so much for your attention.

Shera Dubitsky: Dr. Cigler, thank you. I guess it was somewhat appropriate to be listening to babies and on a hopeful note, particularly given that you were talking about fertility and pregnancy after treatments. We really appreciate this crash course that you said would take three hours and you did a wonderful job highlighting some of the issues and concerns that we are hearing from women every day. So thank you for that.

Our next speaker is Dr. Elizabeth Poynor. She is a gynecologic oncologist and advanced pelvic surgeon. After completing advanced surgical training at Memorial Sloane Kettering Cancer Center and maintaining a successful surgical practice there for more than a decade she decided to focus exclusively on the care of women in a more comfortable and private setting. She has been recognized in New York magazine as a top doctor. She is a director of a fellowship program at Lennox Hill Hospital in New York City and over the years Dr. Poynor has co-authored numerous publications and chapters on topics in gynecology and gynecologic oncology and has lectured nationally, internationally and through the national media. Dr. Poynor has developed a special interest for the management of health and quality of life issues related to menopause and the cancer survivor. She has appeared as an expert commentator on national news shows and has been quoted in many magazines. Dr. Poynor has also spoken on previous Sharsheret teleconferences and is a member of Sharsheret's National Medical Advisory Board. We are very fortunate and honored to have her join us this evening. Dr. Poynor, the floor is yours.

III. Gynecological Health and Ovarian Cancer
Elizabeth Poynor, MD, PhD, FACOG, Gynecological Oncologist, Private Practice

Thank you so much for allowing me to speak tonight. It is always such a pleasure to be able to participate with Sharsheret and these educational webinars. Tonight I am going to be speaking about gynecologic health before and after ovarian cancer treatment. As Tessa said, we are going to cover a whirlwind of issues in a short and

brief period of time. I'm willing and happy to expand on any of them as questions arise.

Ovarian cancer is typically treated with the removal of the uterus, which is the womb and the cervix, which is the opening of the uterus or the womb. Fallopian tubes are typically removed along with the ovaries. Many people also undergo a staging procedure with removal of the lymph nodes and the pelvis and the upper abdomen, with biopsy, also in the pelvis and upper abdomen and the removal of any growth or tumor which is present. Many women are treated with chemotherapy also after surgical therapy with ovarian cancer, so women will suffer with gynecologic consequences of ovarian cancer treatment, both with removal of the uterus, tubes and ovaries along with the chemotherapy impacts.

Women who also undergo prophylactic treatments for ovarian cancer, which include removal of the tubes and the ovaries and also about 20 to 50% of the time with removal of the uterus, will also suffer the impacts of these types of treatments under gynecologic health.

The surgical side effects from removal of the uterus, tubes and ovaries of course will include fertility side effects, hormonal side effects and sexual health side effects. Not only from hormonal impact that removal of the ovaries will also have – but also have potential structural side effects that a hysterectomy can have and also urological side effects from a hysterectomy or the hormonal issues which can occur after the removal of the ovaries.

Chemotherapy side effects, which Tessa outlined so well, include the fertility impacts, hormonal impacts and also the impact on sexual health.

Germ cell cancers are by far the most common cancers in young women without BRCA1 and BRCA2 mutations. Most of these cancers are treated with removal of one ovary currently and a surgical staging procedure. It is really important for gynecologists to understand if they encounter, unexpectedly, a germ cell tumor that only one ovary should be removed and the other ovary should be carefully inspected. Any abnormal areas on the opposing ovary should be removed. However, it is important to try to preserve ovarian function and fertility in these, usually, very young women who have germ cell tumors. And of course physical staging is always a component of treatment of germ cell tumors.

Many of these young women who are in their teens or 20s are also treated with chemotherapy after their surgical therapy. However, a proportion is not. Borderline epithelial ovarian cancers are from the surface epithelial cells of the ovary which are what we typically think of when we talk about ovarian cancer. These tumors are just as they are described, borderline. They are not frankly invasive and malignant but they do have the ability to travel and recur. Most of these tumors are also treated with the removal of one ovary and surgical staging in younger patients who desire to preserve fertility or ovarian function. However, for cancer involved in both ovaries, removal of a cystic tumor only may be appropriate in order to preserve ovarian function. So the goal really is to preserve ovarian function in the very young women with ovarian cancer. For women who have invasive epithelial ovarian cancer which are the cancers which are most commonly associated with BRCA 1 and 2 mutations, removal of one ovary may be appropriate for some women with early stage cancers. Fertility issues can then be solved and a completion oophorectomy or a completion removal of the remaining ovary can be done at a later time.

The uterus also, very importantly for women, should be preserved or a conversation should be had about uterine conservation even when both ovaries are removed. That uterus can then go on to be utilized in the future for assisted reproductive technology, such as a donor oocyte or egg.

The impact of chemotherapy on fertility in ovarian function is dependent on the type of agent used. The alkylating agents are typically the most damaging agents to the ovary. The effects of chemotherapy on the ovary are dependent on the cumulative dose of the chemotherapy and the age of the woman who is receiving chemotherapy. The effects can be temporary or permanent. The temporary affects are generally due to the destruction of maturing follicles which are present at the time of chemotherapy and permanent effects of chemotherapy on the ovary are due to the destruction of primordial follicles or those very early follicles.

Chemotherapy for ovarian cancer includes bleomycin for germ cell tumors, etoposide for germ cell tumors, platinum agents are also used for germ cell tumors or those tumors which occur in very young women along with invasive ovarian cancer and platinum which is an alkylating agent along with taxol which is also typically used for breast cancer treatment.

Many women will have a concern about and, of course, the impact of chemotherapy on future pregnancies. It is important for women to realize there is no increased risk of having children with anomalies, either congenital or chromosomal, due to chemotherapy treatment. There is no effect on the risk of miscarriage, fetal demise or birth weight when a woman has received chemotherapy at a younger age. The children of cancer survivors are not at increased risk of cancer due to cancer treatments. They may be due to having an elevated risk based on their family history or genetic background. However, based on the chemotherapy treatment or cancer treatment alone, children are not at increased risk of developing malignancies. So if a woman has chemotherapy and is able to get pregnant after that treatment the future pregnancies should fare quite well and do well.

Fertility preservation and ovarian cancer treatment and any cancer treatment have been a dialogue which has been increasing over the last 15 years due to the rapid advancement of assisted reproductive technologies. It is really important for the oncologist and the patient to also realize that there are options available for women who may be facing fertility issues when they are undergoing cancer treatments. The various oncologic groups have made recommendations in groups such as Fertile Hope are really making people aware that women don't have to lose their fertility with cancer treatment.

There are ways to preserve fertility when women are undergoing either surgical treatment and removal of the ovaries or chemotherapy treatment, or a combination of both - include, as Tessa said, cryopreservation of embryos which is freezing of a fertilized egg. This requires a partner or a sperm donor. Cryopreservation of oocytes is really gaining in popularity in terms of a way to preserve fertility because the technology is for the first time really improving. The cryopreservation of embryos however, remains more efficient and effective in terms of future pregnancies. IVF pregnancies with cryopreservation and embryos overall are resulting in pregnancy at approximately 60%. However, when you look at the use of frozen oocytes or frozen eggs which are then thawed and then fertilized that drops down to 20%. It doesn't mean in the future as we develop better freeze/thaw techniques and better techniques to fertilize the eggs that this number won't go up and should still be offered to very young women who don't have partners. We are really increasingly recommending the cryopreservation of oocytes. This actually was a larger problem in

women who have had germ cell tumors in the past because they were very young when they were diagnosed in their teens or 20s and we didn't really have anything to offer these women. However, now it has become very standard to offer these women cryopreservation of oocytes after surgery and before treatment with chemotherapy.

Cryopreservation of ovarian tissue has been going on and in action probably since 1997. Actually one of my patients had their tissue preserved at New York Hospital, actually one of my young women with borderline cancer. She was one of the first patients that had her tissue preserved with Dr. Rosenbach and his group. Again, this technology is an evolution. It is considered experimental. There are different ways to reimplant the ovarian tissue in the future. What happens is when the ovaries are removed a slice of tissue is placed in a cryopreservative or frozen and then that tissue may be reimplanted either close to the ovary in the pelvis, in the forearm of the patient and there are also now experimental studies looking at how we use different species and can we use in vitro or in the petri dish maturation of follicles in this tissue to avoid this reimplantation. That brings us to the next concern.

There are special concerns with ovarian cancer, right? You don't want to take tissue out, freeze it and put it back in a woman if there is a risk of having cancer cells in that tissue. There are ways to get around that to place it in a different species like a mouse until the follicles mature, take them out and then fertilize them, the eggs. Or have some other form of in the petri dish maturation and people are looking into that. There are also, of course, special concerns in women with a BRCA 1 or 2 mutation in terms of reimplantation of frozen tissue because of the risk of occult cancer or cancer which can't be seen in the ovary when it is removed. So any time we are taking out tissue in women who have a higher risk of having metastasis of the ovary, whether it is from an ovarian cancer or even a breast cancer or other cancer, we have to make sure that we do a careful pathologic evaluation of the tissue.

Cryopreservation of oocytes or embryos actually offers the woman who has a BRCA 1 or 2 mutation, who may be considering oophorectomy but not really quite ready to have her family yet, options for planning her family, some of my patients actually will go ahead and harvest oocytes or have cryopreservation of embryos then remove their ovaries for cancer prophylaxis if they have a strong family history or a BRCA mutation and then go on to have pregnancies with reimplantation of their frozen embryos or fertilized frozen oocytes. It offers these women the ability to plan their families a little bit more to their liking and not based on their mutation status.

Even if both ovaries are to be removed, it is always important that the surgeon really discuss with the younger patient the possible preservation of her uterus because she can use this for a donor egg or donor embryo in the future. It is also important to realize that chemotherapy, in general, while it affects the ovaries or more rapidly dividing cells, it actually does not affect the uterus or the ability of a woman to carry a pregnancy after the treatment of chemotherapy.

The future direction for fertility preservation in ovarian cancer includes transplantation of preserved ovarian tissues in other species, as we just reviewed in order to avoid possibly transplanting in any type of micro metastatic disease or any cancer cells, in vitro or in the petri dish maturation of oocytes or eggs. There is a new concept that has been circulating around since approximately 2005 or so, when Dr. Tilly and his group at Harvard really brought to the forefront the question of circulating germ stem cells. We typically think of germ cells in the eggs, resting only in the ovary and only being present in the ovary and then undergoing a program depletion throughout their lifetime and that is what causes menopause, when we lose the function of follicles. There is some new very interesting data in mice that indicates that germ cells may

actually reside in the peripheral bone marrow of women and in female mice. Certainly in mice, there seems to be some data to suggest that they are circulating in the marrow, peripheral germ cells. Not all germ cells or eggs are located in the ovary. This is now being referred to as neo-oogenesis. There is no data in humans other than some bone marrow transplant data that when you transplant bone marrow into a menopausal woman she may regain some hormonal function for a period of time. This actually raises super interesting questions for fertility preservation in women, in the future.

Individuals are also looking at new ways to protect the ovary from chemotherapy effects. Sphingosine 1 phosphate is actually a compound that protects cells from undergoing program cell death or apoptosis. This is how cells or germ cells actually are depleted in the ovary by undergoing apoptosis and this is what happens during chemotherapy treatment and radiation therapy treatment and so there is some data in mice again that we can protect the ovaries from radiation therapy by infusing Sphingosine 1 phosphate. The group at Harvard continues to work with this and a group at Sloan Kettering. There is a concept of uterine transplantation in women who have undergone hysterectomies that there is the concept that perhaps uterine transplantation may be something useful in the future, however it is not ready for prime time yet.

A question always comes up in my office especially with younger women is “well what happens if I remove one ovary and what happens to my fertility?” For young women, they don’t seem to have reduced fertility - meaning they can get pregnant at a normal rate barring problems with scar tissue and tubal factors from surgery. However, they should be able to achieve a live birth. The removal of one ovary may impact fertility in older women as they may develop diminished ovarian reserves sooner - meaning those cells are programmed to undergo apoptosis so there are fewer cells in the ovary and then more of those are depleted by treatment with chemotherapy. A young woman who has an ovary removed shouldn’t have problems in the future barring any tubal or adhesion type issues.

I think I went over this already in my presentation of the previous slide for BRCA 1 or 2 mutation carriers. We can offer very young women oocyte preservation or women without a partner who want to use sperm donation; oocyte preservation offering that more and more to women; embryo preservation allowing family planning; and uterine preservation. This is important. The uterus does not need to be removed based on current data with BRCA 1 or 2 mutations and may preserve fertility in a woman, with special concerns with reimplantation of ovarian tissues and micro-metastatic disease.

Women now are also undergoing pre-implantation genetic testing meaning that they are undergoing IVF cycles. The embryo at a very early stage has a single cell taken off where it is not harmful and mutations are looked for in the BRCA1 and BRCA2 gene in order to select for embryos that don’t have this mutation. I actually just had my first patient who underwent pre-implantation genetic testing for BRCA1 or BRCA2 and she actually had a really nice statement today. I actually had the pleasure of seeing her in the office today and she said to me “I can finally end this for my family”. And I thought this was really a statement that had a lot of impact on me. She was very happy, she is 16 weeks pregnant and we look forward to seeing the pictures of her baby.

Hormonal side effects, of course when the ovaries are removed, include quality of life side effects, bone health side effects and also cardiac side effects. We know that when younger women have their ovaries removed or lose ovarian function they have a higher risk of cardiac disease in the future.

Hormonal depletion and quality of life issues of course include hot flashes, vaginal dryness, sense of wellbeing, anxiety, mood issues. A big complaint that I have in my office, especially after some of my prophylactic surgeries, include memory loss, which for women who have to remember a lot of things, whether it is with a job or a family, women can be extremely frustrated by this and, of course, libido and sexual health issues. Ways to begin to correct this is a very superficial slide. These are things you can discuss with your physician or healthcare practitioner including behavior modifications, paced breathing for hot flashes, phytoestrogens, only if it is okay with the oncologist. I always tell my patients with breast cancer that the breast oncologist is the person who is guiding us in terms of the ability to use estrogens or phytoestrogens and has the last word on that.

Integrative and alternative techniques can also be employed such as yoga, which can be good for hot flashes, acupuncture, antidepressants used in low doses such as Effexor and other pharmaceutical interventions such as clonidine which is an anti-hypertension can also be helpful for hot flashes. Topical estrogen such as Vagisan, only if the medical oncologist allows it, but for ovarian cancer I am always fine with it. Vaginal dilators can also be used to increase the blood supply to the vagina and to keep the vagina from constricting due to hypoestrogenic levels. Vaginal lubricants such as Replens and Astroglide, as Tessa mentioned. We have one that we really like called Yes that is all natural, and then of course hormone replacement therapy.

There is no data in terms of hormone replacement therapy being bad and affecting recurrence risk for women with ovarian cancer. I always get concerned about women though who are recently diagnosed with ovarian cancer and have undergone surgery, of course because estrogen replacement therapy will increase a women's risk of blood clots. Surgery and cancer increases a women's risk of blood clots, so I try to avoid it in the immediate perioperative period due to clotting risk. Of course, we are always concerned about the risk of occurrence. There are some ovarian cancers that have estrogen and progesterone receptors on them so we get concerned. The data suggests that it does not alter a women's risk of recurrence. For my very symptomatic women, I review with them the use of hormone replacement therapy. Of course we also have to consider the risk of other cancers and the risk of breast cancer, especially with women who have a family history. There are general safety concerns in terms of risks of blood clots as mentioned above, but also strokes. And there is also the question of androgen replacement therapy. There is limited data on the efficacy of androgen replacement therapy however, it may also be important for wellbeing and libido.

What can you do for bone health? Interventions include calcium and vitamin D. They do have new recommendations on calcium to use less calcium than we were currently recommending that its always important to check Vitamin D levels because most of us use our sunscreen, so we are all now vitamin D deficient. You certainly want adequate vitamin D levels. Weight bearing exercise can also help decrease the risk of bone loss along with the bisphosphonates which is the first line of prevention in women who have low bone mass, selective estrogen receptive modulators such as Romoxacin and Tamoxifen and estrogen which is typically not given to prevent bone loss, however will build bone and Prolia, which is a new type drug to treat osteoporosis.

I always try to review with my patients, whom I am removing both ovaries, to the risk of cardiac disease. Women especially under the age of 45, who undergo an early oophorectomy, will have an elevated risk of cardiac disease and some data also suggests that women up to the age of 65 actually will have an elevated risk of

developing cardiac disease once their ovaries are removed. Of course in the setting of a malignancy the benefits of removing the ovaries far outweigh the risk of cardiac disease. However, time to take note of that is when the ovaries are removed and I always review with my patient's intervention such as good nutrition, low fat diets, paying attention to cholesterol and triglycerides, exercise with 30 minutes of intentional exercise six days a week and also closer monitoring. I will have some of my very young women actually see cardiologists preoperatively to really look at their risk factors to see how they can intervene to decrease their cardiac risk after removal of the ovaries.

Sexual health of course is a big question. Cancer diagnosis in itself will impact sexual health just based on stress levels and body image levels after and during treatment. Treatment impact includes both hormonal in terms of lack of estrogen, but also structural. The hysterectomy has the potential to shorten the vagina and also there are concerns, for some women, about the ability to have an orgasm after a hysterectomy and removal of the ovaries. However, most data suggests that if you have a healthy, happy sex life preoperatively, you should be able to achieve one postoperatively, but this type of surgery should not impact in terms of the structural impact, the ability of a woman to have sex or to enjoy sex.

Of course body image is quite important and I briefly reviewed the structural impact of a hysterectomy. If you look online and read about hysterectomies there will be concerns about the removal of the cervix at the time of the hysterectomy and the impact this may have on sexual health. The cervix is not a sexual organ and the data, again, demonstrates that women who have a total hysterectomy with removal of the cervix which is standardly done when we do a cancer operation, have the same level of excellent sexual functioning compared to women who had the cervix left in. They actually may do better from bladder prolapse. Women who have the cervix left in may have more issues with prolapse and abnormal bleeding. Generally, as oncologists, we like to take the cervix out at the time of an ovarian cancer operation and that should not impact the ability to have intercourse or to enjoy intercourse.

Neurological side effects of ovarian cancer treatment include those that are related to hormonal impacts and also structural. Women may begin to have bladder control problems in terms of ability to hold urine due to lower estrogen levels and also potential structural issues after surgery. Along with an increased number of urinary tract infections due to vaginal atrophy or thinning of the vagina. Most of which can be corrected with the appropriate use of pelvic floor exercises such as Kegels exercises and also vaginal moisturizers to prevent urinary tract infections.

Birth control after ovarian cancer. Hormonal birth control is acceptable with the use of oral contraceptives. Actually for my very young women who have ovarian cancer, I try to encourage them to go on oral contraceptives if they can tolerate them because it actually prevents cyst formation in women who have one ovary. We don't want to have a large corpus luteum or follicular cyst that may need to be removed at some point, in order to really preserve that ovary in terms of cyst formation and not requiring additional surgery. I try to encourage my patients to go on oral contraceptives. Oral contraceptives, of course, will decrease the risk of ovarian cancer overall so they don't have an adverse impact on women who have been treated for early stage ovarian cancers. Of course barrier methods including diaphragm and condoms are also acceptable, as well as an IUD. Tessa mentioned an IUD because there has really been a resurgence in the use of IUDs over the past 10 years. The older IUDs that you would read about were associated with more discomfort and pelvic inflammatory disease which can impair fertility in the future. ACOG, which is a large group of obstetrics and gynecologists who have come out

with a recommendation in the recent past with research that says that IUDs are actually an excellent method of birth control for younger women. I think they are very excellent for women who also are using Tamoxifen because it allows women who are in committed relationships not to have to use barrier methods and have a reliable method of birth control.

In some ways I think it is important to be aware of the gynecologic side effects of ovarian cancer treatment. Review these with your physician if you are experiencing problems and issues. Don't just suck it up and say this is what I'm left with. Because we can do things, but we can't do things if we don't know that you are having a problem. It is really important if you are having a problem with vaginal dryness or sexual health issues to bring it up to your healthcare team, because we should always ask about it, but we don't always ask about it, and a team approach is really important. I always try to highlight that to my patients also. Communication with the medical oncologist, the surgical oncologist, and the gynecologist is super important. Especially in women who have been treated by gynecologists who have problems with breast cancer side effects to really have that. Pick up the phone and speak to the other physician.

Resources include the NIH website Fertile Hope, which is Lance Armstrong's group, Livestrong, and ASCO, the American Association of Clinical Oncology all have resources directed towards patients. Thank you very much for allowing me to speak this evening.

Shera Dubitsky: Thank you, Dr. Poynor. As you were speaking it reminded me of a recent conversation that I had with a woman who was newly diagnosed with ovarian cancer and she was talking about how she felt that her quality of life would be wiped out. I think that your sharing a discussion about sexuality, and perhaps some fertility options, again offers a hopeful message for those women who are newly diagnosed with ovarian cancer. I also want to go on the heels of what you were talking about in terms of going to your physician and to remind everyone that all the information that we are discussing tonight is really broad in nature and you should discuss your unique variables with your own personal treatment team.

Our last speaker is a Sharsheret peer supporter. Susan was diagnosed with breast cancer when she was 32 years old and at that time she reached out to Sharsheret, she was single and she was very concerned about her fertility options. Since that time Susan has served as a link many times as a peer supporter and she has since married and had children. So Susan I would like to hand the floor over to you.

IV. My Personal Journey
Susan, Cancer Survivor in Sharsheret's Peer Support Network

Okay, great. Thank you for allowing me to share part of my story this evening. Sharsheret has been with me since my story started and I love being a part of it. I was diagnosed with breast cancer at age 32 and at the time I was single and had no children. I had surgery followed by chemotherapy. I immediately obtained a link from Sharsheret and that is the beginning of what brings me to this teleconference.

The short weeks between my diagnosis and treatment were jam packed with doctor's visits and many, many decisions. The decisions included what doctors to use and I obtained second opinions for nearly every type of doctor and also what treatments to use. It was important to me to obtain as much information as reasonably possible, so that I could make, what I hope to be the best decisions for my situation.

One of the things I had to consider throughout my decision making process was my future. Aside from deciding on my options to maximize my chances of survival, I was also considering what options would increase my quality of life. Therefore, I wasn't just making decisions for the present, but for the future too, hopefully. This outlook kept me grounded, helping me refocus some of my worries on whether I would survive to almost assuming that I would and then making my survival a good one. One such decision played out as follows. My doctor advised me that two types of chemotherapy would be appropriate for my cancer. One had an increased risk of hair loss, but a decreased risk of early menopause. The other had an increased risk of early menopause but a decreased risk of hair loss. I chose the chemotherapy that would make me lose my hair, but would most likely preserve my fertility. I have always wanted children, so the choice was logically a no brainer. However, I still struggled with this decision because, for me, the hair loss was the most traumatic part of having cancer.

It is pretty crazy to stare death in the face and worry about how I looked. What that taught me was that I was still a person with a self-image not just a cancer victim. All the wigs, the hats, the fake eyebrow kits and special makeup that I saw advertised for cancer victims reinforced that point too. Cancer patients still have control. One thing that I did do was, I cut my hair short so that when it started to fall out I wouldn't see my long hair all over the place.

Another thing that I did to take control of the disease was to meet with a fertility specialist. I was concerned that the chemo would affect my ability to have children. I believe at the time there was a 3% risk of early menopause with the chemo course that I chose. In a way it all seemed so secondary. The main thing for me was to live. I didn't know if I'd live long enough to have children and, if so, if I'd ever find someone that wanted to risk having a family with a cancer patient. But I had to live as if I would beat the disease. Again, making the decision about what my life would be like after I beat the disease reinforced the fact that I was more than just a cancer victim. I was a person with a life to lead and a future to have.

The fertility specialist proposed some options including putting my ovaries in my arm, freezing my eggs, which unlike freezing embryos, had a very low success rate. I can't recall it all but in the end I just decided to proceed with the chemo and take my chances. Thankfully, the chemo did not prevent me from having children. And I now have children. However, for various reasons, the doctor recommended removal of my ovaries. I underwent this procedure after my last child was born. This most recent surgery did obviously trigger early menopause, putting me in a strange position of experiencing hot flashes while chasing after a one year old. However, menopausal symptoms not withstanding, this decision too was a no brainer. I hope to be around long after the hot flashes go away and continue to be a survivor.

Shera Dubitsky: Susan, thank you very much for sharing that. I think it is important to put a voice to the issues that have been addressed by the medical professionals this evening. I also want to encourage those of you who are on the call tonight that you can call here to get support from women like Susan and to also feel you are in a position where you are empowered to offer support as well. If Susan's story has inspired you to become a peer supporter yourself, please feel free to give us a call here in the office.

V. Question & Answer Session

Shera Dubitsky: I also want you to keep in mind that again we are speaking generally and all the insights and answers should be run by your medical team. This is a question for Dr. Cigler. You had talked about soy. This is something we get many questions about. When you say avoid soy what does this include and how bad is this for you?

Dr. Cigler: The issue of soy and breast cancer is very, very complicated. I think you can read anything you want about soy. You can read that it is good for breast cancer and you can read it is bad for breast cancer. I think my advice to women is that soy is fine to eat as a food. But we really advise against taking soy supplements. So everything in moderation - with soy in moderation as a food is fine, but to not take soy supplements with an all soy based diet.

Shera Dubitsky: Okay. Thank you. Dr. Poynor, is there a latest recommended age to undergo an oophorectomy for women with an extensive family history of breast cancer or ovarian cancer or who carried the BRCA mutation?

Dr. Poynor: We generally like to have the ovaries removed by the age of 35 because the risk of ovarian cancer especially with BRCA one mutations begins to go up between the ages of 35 and 40. And so we generally like to say that by the age of 35 or after child bearing is complete. If the woman has completed her child bearing earlier than that and she is ready to take her ovaries out, that is also a reasonable time to do it. I also try to encourage people to look at their family histories to see when the cancers developed and the age in which it developed. Not to extend out the time to review their ovaries, but they may consider removing them younger if the cancers that occurred in their families where ovarian cancers occurred at a younger age. But generally after child bearing is complete or by the age of 35.

Shera Dubitsky: Okay, great. Thank you. Another question came in I guess Dr. Cigler you can take this. Are there implications of radiation treatment for breast cancer on fertility?

Dr. Cigler: That's an excellent question. The implications of radiation on fertility and as far as I know, there is no data to help me answer that question. We do advise that women who have radiation wait a long period before thinking about having a pregnancy because of some of the prolonged effects of radiation on the actual ovaries. I don't know if Dr. Poynor has more to add to that.

Dr. Poynor: Right. We generally ask people to wait at least six months, which is the current recommendation because of the chromosomal breaks that can occur from the radiation therapy. So women who have undergone radiation can wait before they have their pregnancies. Again, you know, radiation is not commonly used for ovarian cancer, especially for early stage disease. It is used for other gynecologic malignancies and there are ways to move the ovaries and to transpose them and to move them out of the field in order to try to preserve ovarian functions. Some people are actually trying to completely transpose the ovaries into the forearm and other more unusual locations. Again, we are really at a great age in technology in terms of what we can do to help women preserve their ovarian function.

Shera Dubitsky: Thank you. We also received a question about a hormonal replacement post breast cancer. In general how long are women taking this?

Dr. Cigler: Hormonal replacement therapy after the diagnosis of breast cancer is really for the most part not recommended. For women who are taking hormonal replacement and

develop a breast cancer we try to have them take her off and stop and we recommend that women with a diagnosis of breast cancer do not subsequently start hormone replacement therapy.

Shera Dubitsky: Okay. Susan, I have a question for you. How did you go about researching your options for fertility because there seems to be so much information out there it can be very overwhelming?

Susan: I went about researching; really mostly I relied on the doctors. They actually advised me not to go online and do all sorts of research because there is so much out there. And it is not all applicable to everybody's situation. Really your own situation has its own variables. So I think that what I decided to do was I kind of relied on my doctors. I picked doctors I really trusted and got second opinions to make sure I trusted the doctors that I was choosing and I listened to what they had to say. It was really at that point when I was researching my treatment that it ended. I just listened to what the doctors had to say and listened to what the options were and then made my decision based on consultation with family and decided what made the most sense.

Shera Dubitsky: Thank you, Susan. Dr. Poynor, you had mentioned a natural vaginal lubricant. Can you say more about that?

Dr. Poynor: Yes. You know there is a move in this country to really look at what we put in our bodies whether it's cosmetic or topical agents. It is important to remember that what we put on our skin actually goes into our body and the vagina is a mucoidal surface so things that we put in the vagina are obviously absorbed. The United Kingdom has actually been a little bit ahead of us in terms of all natural types of products in terms of skincare, hair care and also in vaginal lubricants. Because it is a form of skincare, there are a number of them that are coming on the market in the United States. However, the one that we like and that our patients like is called Yes, Y E S. It is a combination of, I believe, sunflower oil and almond oil and it does have some natural preservatives in it of course to make it safe, but it doesn't have parabens and the other more artificial substances. And there is a group called the environmental working group which will actually categorize skincare products, hair products, vaginal lubricants and sunscreens in terms of the components that are in them in terms of how much of them are natural and how much of them are more chemical based actually. That is a place where women can go to look at their lubricants that they are using, but YES is the one that is really nice. The nice thing is you can use it also as a moisturizer, which is not a lubricant, but you can use it as a moisturizer so it traps moisture into the vagina.

The other thing we are also using is called hyaluronic acid. It is not estrogenic. It just traps water. It is the same type of thing that we use in the moisturizers for our skin. We actually compound them into a vaginal lubricant and moisturizer. And we have had some good success with that. We want to start a study of that. Hyaluronic acid is also a good one that can be compounded, and again, not estrogenic.

Shera Dubitsky: Thank you. We had a question actually about the IUD and is there a concern about the hormone levels from an IUD birth control.

Dr. Poynor: There are two types of IUDs. The first is ParaGard which is just a copper IUD which interferes with implantation of a fertilized embryo just based on it making a hostile environment and based on irritation of the uterine lining. That is the one that I have put in a lot of my patients who have cancers. The other is called the Mirena IUD and that is hormone releasing IUD and that contains a progestin. Depending again on the medical oncologist, some will allow me to put in a Mirena IUD, others won't allow

me to put it in - again if it is hormone releasing. It is advertised as not having achieved any great systemic levels of progestin and it is advertised as keeping everything local. However, there are certainly women who have systemic side effects from it in terms of weight gain and some mood issues with Mirena IUD so there is probably in some women, some significant absorption of progestin. Again, with any hormone I always tell my patients that the medical oncologist is leading the effort in this and there are two different kinds of IUDs, the ParaGard without hormone and the Mirena with the progestin.

Shera Dubitsky: Okay. A general question we would have is does any of the information that either you, Dr. Poynor or Dr. Cigler spoke about today does any of this change for women who are triple negative?

Dr. Cigler: That is a complicated question. As we learn more about breast cancer, we learn that breast cancer is probably not one disease, but a group of many diseases that really vary in its molecular characteristics. Triple negative breast cancers are breast cancers that are neither HER2 or estrogen or progesterone positive. The question is, do some of these gynecological hormonal issues change? Yes and no. It is a little bit of a complicated answer. Some things do change and many of these recommendations don't change. For women who have triple negative breast cancers they aren't getting hormonal therapies as treatments, so tamoxifen is not prescribed and the aromatase inhibitors are not prescribed either. We still tend to be reluctant in allowing these women to take hormone replacement therapy or the oral contraceptive birth control pill, just with the idea that there is a lot about hormonal interactions that we probably don't understand as to how they increase the risks of both hormone receptor positive and triple negative or ER PR negative breast cancers. We also worry about the risk of second primary breast cancers and those can be hormonally driven or not.

Shera Dubitsky: Thank you. We received a question about when doing a prophylactic oophorectomy to address the removal of the tubes. Is that something that you can address?

Dr. Poynor: The tubes are always removed at the time. It is actually a prophylactic bilateral salpingo-oophorectomy, salpingo refers to the fallopian tube. And there are a number of studies that had demonstrated that the occult cancers which we find in women who have BRCA 1 or 2 mutations actually are arising in a distal or in the fallopian tube near the ovary. There is a thought that a portion of ovarian cancers arise from the fallopian tube usually from the distal end, but can be found in the mid portion also. We always do remove the fallopian tubes and we there should always be careful attention to detail to remove the complete fallopian tube at the time of prophylactic surgery.

Shera Dubitsky: The final question that we have for tonight - is there any news or any upcoming research about diagnostic options now for ovarian cancer beyond the CA125 and is there anything that you are seeing in the research or on the horizon.

Dr. Poynor: I think there is obviously an ongoing vigorous search using new tumor markers and combinations of tumor markers. You know, to date probably one of the more promising ways to screen for ovarian cancer or early detection of ovarian cancer is something called the risk of ovarian cancer algorithms. That is where we put in a women's risk of developing ovarian cancer based on genetics or family history or personal health history. Her CA125 rate rises overtime, so we are using an ultrasound and we are using all the same modes of modalities in terms of ultra vaginal sonography and CA125 but we are trying to use them in a more intelligent fashion. Not just an absolute cut off of CA125 and looking at the rate of rise over

time. That seems to be one of the most promising things that are out there right now. Of course people are looking at tumor markers to pick up ovarian cancer early. Nothing is approved yet. Nothing has been well demonstrated. And screening studies there are some new tumor markers which help us discriminate between benign and malignant masses with some success. We are not ready for prime time in terms of screening.

VI. Teleconference Conclusion Closing Remarks

Shera Dubitsky: On the heels of that question I just want to say we did receive a question about some ovarian resources. I just wanted to remind everybody that is on the call tonight that Sharsheret does an ovarian program for women who are diagnosed with ovarian cancer and we can give you a peer supporter like Susan and we have resources as well. So certainly feel free to give us a call. I would like to thank Susan and Dr. Cigler and Dr. Poynor for all of your insight and information tonight and I would also like to thank all of you for joining us tonight, and for your push for us to explore this important topic. I encourage all of you to complete the evaluations you will be receiving in your email boxes tomorrow because your feedback drives our program so that we can continue to address your concerns and needs. Sharsheret is wherever you are at any time. I encourage you to visit our website at www.sharsheret.org. Like us on Facebook, follow us on Twitter and look at our blog. You can also call us at 866-474-2774. We are here for those of you who are at high risk of breast cancer or ovarian cancer, those of you undergoing treatment and I am excited to share that we will be launching a survivorship program this fall called Thriving Again, to address the unique concerns and needs that come with survivorship.

We are with you as you need us and I want to thank you all again and want to wish you all a good night. Take care.

VII. Speaker Bios

Shera Dubitsky, MEd, MA is the Clinical Supervisor at Sharsheret. Shera assists women newly diagnosed and at high risk of developing breast cancer, provides supportive counseling to women living with metastatic breast cancer, and lectures nationally on topics addressing the needs of women facing serious illness. Prior to joining the Sharsheret staff, Shera worked as a researcher at Memorial Sloan-Kettering Cancer Center.

Elizabeth Poynor, MD, PhD, FACOG is a gynecologic oncologist and pelvic surgeon who focuses on the comprehensive surgical management of gynecologic cancers and works with medical and radiation oncologists to facilitate a compassionate, multidisciplinary approach to the management of women's cancers. She has special expertise in the complex management of women and their families who have a genetic predisposition to developing breast cancer and gynecologic malignancies. As a surgeon scientist, Dr. Poynor's work focused on translating basic science principles into clinically meaningful treatments and she served as Director of Translational Research for the Gynecology Service at Memorial Sloan-Kettering Cancer Center. She has also served as an investigator in numerous clinical trials relating to surgical, medical, and biological treatment of gynecologic cancers.

Tessa Cigler, MD, MPH received her undergraduate degree from Harvard College, and her medical degree from Duke University School of Medicine. She also holds a Master's degree in Public Health from the Harvard School of Public Health. She

completed her residency in Internal Medicine at New York Presbyterian Hospital Weill Cornell Medical Center, followed by a fellowship in Medical Oncology and Hematology at the Dana-Farber Harvard Cancer Center. Dr Cigler joined the Cornell faculty in August 2007 as a medical oncologist and clinical investigator at the Weill Cornell Breast Center.

VIII. About Sharsheret

Sharsheret, Hebrew for "chain", is a national not-for-profit organization supporting young women and their families, of all Jewish backgrounds, facing breast cancer. Our mission is to offer a community of support to women diagnosed with breast cancer or at increased genetic risk, by fostering culturally-relevant individualized connections with networks of peers, health professionals, and related resources.

Since Sharsheret's founding in 2001, we have responded to more than 24,000 breast cancer inquiries, involved more than 1,600 peer supporters, and presented over 250 educational programs nationwide. Sharsheret supports young Jewish women and families facing breast cancer at every stage—before, during, and after diagnosis. We help women and families connect to our community in the way that feels most comfortable, taking into consideration their stage of life, diagnosis, or treatment, as well as their connection to Judaism. We also provide educational resources, offer specialized support to those facing ovarian cancer or at high risk of developing cancer, and create programs for women and families to improve their quality of life. All Sharsheret's programs are open to all women and men.

Sharsheret offers the following national programs:

The Link Program

- *Peer Support Network,* connecting women newly diagnosed or at high risk of developing breast cancer one-on-one with others who share similar diagnoses and experiences
- *Embrace*, supporting women living with advanced breast cancer
- *Genetics for Life,* addressing hereditary breast and ovarian cancer
- *Busy Box,* for young parents facing breast cancer
- *Best Face Forward,* addressing the cosmetic side effects of treatment
- *Family Focus*, providing resources and support for caregivers and family members
- *Ovarian Cancer Program*, tailored resources and support for young Jewish women and families facing ovarian cancer
- *Sharsheret Supports*, developing local support groups and programs

Education and Outreach Programs

- *Health Care Symposia,* on issues unique to younger women facing breast cancer
- *Sharsheret on Campus,* outreach and education to students on campus
- *Sharsheret Educational Resource Booklet Series,* culturally-relevant publications for Jewish women and their families and healthcare professionals

IX. Disclaimer

The information contained in this document is presented in summary form only and is intended to provide broad understanding and knowledge of the topics. The information should not be considered complete and should not be used in place of a visit, call, consultation, or advice of your physician or other health care professional. The document does not recommend the self-management of health problems. Should you have any health care related questions, please call or see your physician or other health care provider promptly. You should never disregard medical advice or delay in seeking it because of something you have read here.

The information contained in this document is compiled from a variety of sources ("Information Providers"). Neither Sharsheret, nor any Information Providers shall be responsible for information provided herein under any theory of liability or indemnity. Sharsheret and Information Providers make no warranty as to the reliability, accuracy, timeliness, usefulness or completeness of the information.

Sharsheret and Information Providers cannot and do not warrant against human and machine errors, omissions, delays, interruptions or losses, including loss of data.