Acta Scientific CANCER BIOLOGY (ISSN: 2582-4473)

Volume 6 Issue 2 February 2022

Commentary

Telling Her Story: She has a Breast Cancer. What about Her Future?

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Received: January 28, 2022

Published: February 07, 2022

Abstract

The burden of cancer incidence and mortality is increasing worldwide making it the leading cause of mortality in 2020 with an ascribable estimate of ten million deaths. In the same year, 19.3 million new cancer cases were recorded with the most common being female breast cancer accounting for 11.7 percent of all registered cancer cases [1]. This increase in incidence over the years is attributed to aging of the population with the accumulation of risk factors, cellular insults, and loss of repair mechanisms with older age. The burden of cancer, specifically breast cancer, can be reduced by implementing strategies designed to decrease delays and barriers to diagnosis and patient care. Breast cancer incidence and prevalence has increased due to screening, early detection, and improvements in treatment outcomes.

Introduction

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Breast cancer risk factors

A multifactorial pathophysiology is suggested for the development of breast cancer including genetics, environmental and socioeconomic factors. For instance, BRCA 1 and 2 mutations account for ten percent of breast cancers; female sex, age, nulliparity, family history of breast cancer, early menarche and late menopause, previous chest radiation are also known risk factors [2].

Her journey starts today

Breast cancer histology and subtypes

Breast cancer can be classified by hormone receptivity, anatomical origin, and molecular subtypes.

- Immunohistochemical presence or absence of specific receptors guides breast cancer treatment. Hormone receptivity

represents the expression of progesterone and estrogen receptors (PR/ER) in malignant cells which are responsive to hormone blocking therapy; human epidermal growth factor receptor 2 (HER2) expression is amenable to targeted monoclonal antibodies. Around 12 percent of breast cancers do not express any of the above-mentioned receptors, termed triple negative breast cancer; this subtype tends to be of a more aggressive nature than others [2].

- Anatomical classification refers to ductal or lobular origin further categorized into in situ and invasive carcinoma. Ductal carcinoma in situ (DCIS) is more common than lobular carcinoma in-situ (LCIS). DCIS is then further subclassified based on tumor architectural features. Of the infiltrative breast cancer, 70-80 percent is accounted for by invasive ductal carcinoma (IDC). Infiltrating lobular carcinomas (ILC) are almost always ER/PR positive, occur bilaterally and more prevalent among post-menopausal women contrary to medullary breast cancer which is more prevalent in younger females with BRCA 1 mutation. Other less common subtypes include mucinous, tubular, Phylloides breast cancer, and mammary Paget which is an adenocarcinoma of areola and nipple [2].
- A new method for classification of breast cancer, molecular classification, was proposed in year 2000 by Perou and Sorlie. This divides breast cancer into five subgroups according to differences in gene expression: luminal A, luminal B, HER-2, triple negative (basal), and normal breast like. Molecular subtyping directs personalized and targeted treatments tailored to each patient, and detects differences in treatment response and metastatic pattern, further validating its diagnostic and prognostic advantage over older classifications [3].

Breast cancer staging work-up

A multidisciplinary approach is required for the diagnosis of breast cancer. Beginning with a complete personal and family medical history with targeted questions about familial ovarian/breast cancer and gynecological history of the patient, followed by physical examination [4]. Palpable breast masses in females do not necessarily denote malignancy; differential includes benign conditions such as cystic changes, fibroadenomas and intraductal papilloma. Clinical signs that direct towards a more malignant nature include dimpling, excoriations, nipple retraction, and serosanguinous discharge. It is noteworthy to mention that 30 percent of patients with breast cancer will have a palpable mass [2].

The US Preventive Services Taskforce (USPSTF) and the American College of Obstetricians and Gynecologists (ACOG) recommend against monthly self-breast examinations. Clinical breast examination is recommended every one to three years by the ACOG, contrary to USPSTF and American Cancer Society who do not recommend clinical breast examination. Mammography screening is recommended by the USPSTF for all females aged between 50-74 years. Females with risk factors such as family history of breast cancer and BRCA mutations should start their screening regimen earlier than the general population (40-49 years of age) further emphasizing on the importance of screening programs for early, preclinical stage detection of breast cancer [2].

Imaging modalities include ultrasound (US), mammography, and MRI in select cases (such as dense breasts, familial breast cancer with BRCA mutations, evaluation of contralateral disease and presurgical biopsy planning) [4]. Reporting radiologic findings is usually done by the Breast Imaging and Reporting Data System, BI-RADS. Findings such as spiculations, irregular mass, microcalcifications, and lymphadenopathy are suggestive for infiltrating disease.

Following imaging identification of a breast mass, the next step is tissue biopsy which can be done by US-guided large-bore core needle biopsy, the preferred method, or obtained guided by MRI or as excisional biopsy. Tissue biopsy is essential for diagnosis, grading the disease and designing a treatment plan. Information from biopsy includes immunohistology (ER/PR/HER-2 expression), tumor grade (well differentiated grade 1 versus poorly differentiated grade 4), and oncotype DX breast recurrence score which provides information about risk of recurrence and the potential use of neoadjuvant chemotherapy [2]. Finally, breast cancer classification and staging should be made according to the TNM (tumor, nodes, metastasis) system set by the World Health Organization (WHO) and the American Joint Committee on Cancer (AJCC) further providing prognostic information [4].

Management of early breast cancer

Facing different levels of fear, stress, and anxiety after the diagnosis of breast cancer, patients require time and space to process

and understand the information being given to them. Clinicians should address these issues, explain repeatedly and comprehensively management options, and involve the patient in decision making; thus, helping them to psychologically cope with their diagnosis and creating a ground for trust for the next step, treatment. A combination of local (radiation therapy (RT), surgery), systemic (chemotherapy, targeted therapy) and supportive measures are the cornerstone approach of early breast cancer treatment [4].

Surgical options include lumpectomy (breast conserving surgery, BCS) and mastectomy with reconstruction. The main goal of surgery is to improve survival, achieve local tumor control and prevent regional recurrence. Regional lymph node status is a strong predictor of prognostic outcome in breast cancer; however, axillary lymph node dissection (ALND) does not come without its bag of risks namely lymphedema and nerve injury [5]. Sentinel lymph node biopsy (SLN), a minimally invasive method, is now the standard of care in radiographically and clinically node negative breast cancer. If the SNL shows evidence of metastatic disease, complete regional dissection remains a debate between clinicians whether it is of clinical benefit or not [2].

Radiation therapy (RT) is almost always used in breast cancer management be it before surgery (stage T2 or more), but more commonly after BCS. Adjuvant whole breast RT after BCS (also to axilla) reduces the ten-year risk of regional and distant recurrence by 15 percent [4]. Radiation therapy also plays a role in palliative care by minimizing pain of bone metastasis and neurologic deficits secondary to tumor deposits. Early radiation side effects include local erythema, breast discoloration and candida dermatitis; and on the long run pulmonary fibrosis and heart failure may ensue [5].

The choice of systemic treatment depends on the type and stage of breast cancer as well as multiple prognostic factors including but not limited to the age of the patient. Neoadjuvant chemotherapy usually with doxorubicin, cyclophosphamide and paclitaxel is indicated for locally advanced disease and triple negative breast cancer prior to surgery. Adjuvant systemic therapy, administered after surgery is based on hormone receptivity of the tumor, HER-2 status, and histology. Aromatase inhibitors (AI) and selective estrogen receptor modulators (SERMs) are used in hormone receptor positive and non-metastatic breast cancer. SERM's are used in premenopausal females whereas AI are used in post-menopausal patients. However, high risk females with PR/ER positivity, younger than 35 years with positive nodes and large tumors can benefit from AI's with ovarian function suppression (oophorectomy or gonadotropin releasing hormone agonist). Current guidelines for PR/ER positive breast cancer recommend the use of SERM's for five years followed by AI for five years. Tamoxifen is the most used SERM and can cause abnormal uterine bleeding with an increased risk of endometrial hyperplasia and carcinoma. As for AI's, they can cause accelerated bone loss so bone density monitoring is recommended with bisphosphonate use in select cases; AI induced arthralgias can be managed by NSAID's and physical therapy. HER-2 positive breast cancers are responsive to HER-2 receptor blockers such as trastuzumab. However, primary resistance is reported in 30 percent of patients and can reach up to 70 percent is secondary resistance. Side effects include heart failure so monitoring left ventricular ejection fraction is mandatory. Finally, triple negative breast cancer is treated by a combination of chemotherapeutic agents as they do not have endocrine receptivity [2].

Telling her story: Today and tomorrow

Being diagnosed with Breast Cancer in my 7th month of pregnancy was an incredibly shocking experience, not only for the coming baby girl but for her 2 sisters in front of me, five and four years old.

Should I live enough to see my girls growing? To teach them how to be strong and independent women? To tell them how to mend a broken heart?

Will my future be a couple of days? A year? Do I have the hope of life again? The whole strip of my life runs in front of me with a waterfall of tears. Deeply soaked in tears, so many questions and ideas are pounding and bothering me.

I remember sitting across the desk of my Oncologist Dr. Georges El Hashem being told that I have a stage 3 breast cancer HER-2 positive and consequently would need 8 sessions of chemotherapy, mounting to 6 months of treatment. After that, I will have to undergo mastectomy, followed by 30 radiotherapy sessions and 12 sessions of chemotherapy. Then, after completion, I would still have to 2 years of periodic checkups by X-rays, blood tests and scans (PET, CT's, MRI's).

Obviously, I was scared at first, but it didn't take long for the anger and fear to start fading away. I never considered giving up and never gave up any thought of losing the battle.

Joy, anger, sadness, happiness, bliss, grief, loosing hair... It's all temporary.

I chose to be strong and to fight with my positive character knowing that it's not going to always be easy; some days I had to endure more and push harder to keep on going.

I am surviving cancer with a smile and with perseverance and fighting attitude. No matter what it is going to take, I am here stronger than ever even knowing that every session will be a little bit harder than the one before it.

We always fear the unknown, and to me it was cancer. But with my fighting spirit and positivity and for my little girls, I made it here despite the side effects and fallouts.

"You never know how strong you are until being strong is the only choice you have". Beating cancer was my battle, and this battle exactly showed me how strong I am. I have lived by this quote since the beginning and I passed it well, strong, positive much more thankful and grateful.

At the beginning I had to tell my daughters what I'm going through, like taking a poisonous medicine making me sick and causing my hair to fall. I will be always in pain and tired, I will gain or lose some weight for unknown reason. I will also face some eating problems such as not feeling hungry, trouble swallowing, that's why I will need some time to rest. I will be absent spending countless hours in hospital but no matter what my love to you will make me stronger and will give me strength I need to push myself to the finish line.

The chemotherapy treatment went smoothly without major side effects as spoken, thanks to my oncologist for the supplementary medicine I was given before and after every session; masking the feeling of nausea and vomiting but that did not mean that I was okay. Cancer forced me to deal first with no breastfeeding to my baby girl, I suffered a lot of pain spending many nights crying. Cancer forced me to deal also with diarrhea because of Taxotere (Docetaxel). Dizziness, loss of appetite, changes in fingernails, as well as losing part of my body, my hair, wearing a wig, pretending not to be sick, menopause feelings so soon, infertility, and that's just naming a few.

But instead of staying in bed, I chose to make some changes in my life. I started taking belly dancing classes and it supplied me with energy and enthusiasm. I also started to work out since the steroids I was taking gave me some extra weight and that made me happy. Nothing could stop me from doing what I love to do, I even continued going to my job every single day.

All this time, I wear positivity in my soul, my faith was and always shall be strong. I always had a sense of humor. When people ask me how I got through my journey, I tell them you must have an incredible support system, which I thankfully had. My Husband and my girls were my rock, without forgetting my lovely sisters, my parents and parents in law, my whole friends. I am blessed I had and still have this support system in my life. Also, without forgetting my doctor and the always encouraging nurses' team who were always smiling, encouraging, filling me with hope and faith for a better future. I was humbled by how many amazing, loving people I was surrounded by; never a day did I feel lonely or neglected.

Eight sessions of Chemotherapy went by well; it is now time for my surgery. I decided to have bilateral mastectomy with immediate breast reconstruction surgery.

It hurts. It was so difficult with my baby girls. I couldn't open my arms first, but with exercise started to loosen. It was not easy, but it passed. It was not a normal surgery, a part of my body left me with no feelings and that was extremely difficult.

At that time, I just wanted to get the surgery over with and to remove the breast that was home to my tumor and to move on.

A range of emotions circled me around this period. Of course, I feel grateful for making it to this point, but I also felt sadness for the loss of my breasts and the feeling of femininity and motherhood that comes along with. I didn't realize at the time the fact that that the surgery had left me with scars, implants, and lack of nipples and that I would mourn my breasts for a long time. Every time I see my scars, I realize how much I suffered with pain, how much I went through to reach where I am today. It will forever tell my survival story which I am proud of. My scars are the sign that I have been a brave fighter, not to mention my conviction that nothing happens but for a reason. No matter how hard we try to avoid things or change them, what is meant to be will always find its way.

After receiving the news that I am cancer free and in remission, my tears felt as celebration, my body had responded to chemotherapy.

Having said this, I humbly and with profound reverence owe this victory to myself and to my family. Thank you doctor, thank you my body, I can live my life normally after all. The priority is 'Me' now and my own healing mentally, emotionally, and physically.

For all those fighting breast cancer, or any cancer, always remember how strong you are. I do not know if my story will make a difference, but I hope it will give someone the strength and faith they are looking for.

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