Short Communication

Sudan First International Conference on Breast Cancer
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Abstract
The first International Conference on Breast Cancer titled “All together Against Breast Cancer” was held in Friendship Hall, Khartoum, Sudan, December 5th-7th, 2011. The meeting was organized by the University of Medical Sciences and Technology (UMST) in collaboration with African Organization for Research and Training in Cancer (AORTIC).

Topics discussed during the meeting included an update on breast cancer epidemiology, introduction of the Sudan cancer control strategy and the newly established cancer registry, status of mammography utilization and early detection, prognostic and predictive makers of breast cancer as well as biomarkers of triple negative tumors. Furthermore, the meeting covered the current surgical and therapeutic interventions practiced in Sudan as well as palliative care and role of media in cancer awareness and advocacy. About 800 physicians, scientists, pathologists, nurses, students and media representatives attended the meeting. The third day, four workshops were conducted and about 220 health care professionals were trained. The conference succeeded in bringing ten health care institutions to come together to discuss the cancer problems in Sudan. At the end of the meeting the following recommendations were drafted and included standardization of diagnosis and treatment of breast cancer: campaigns to advocate for breast cancer early detection and the importance of yearly breast examinations; call for the government and private sectors to provide breast cancer detection and treatment with reasonable cost; establishment of Cancer Centers in different regions of the Sudan; better the radiological services and train the necessary cadre; and finally and importantly the encouragement and support of cancer research.

Keywords: Breast cancer, Sudan, cancer registries, strategic plan, Africa

Introduction
The 3-day meeting started with an opening ceremony in the University of Medical Sciences and Technology’s beautiful courtyard. The evening was well attended and among the dignitaries were his Excellency, National Ministry of Health Dr Elsadiq

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Overview of breast cancer in the Sudan

In Sudan, breast cancer is the most common malignancy in women. From the few, limited sources we can indicate that breast cancer in Sudanese women is in the rise. Unfortunately, 80-85% of these women present with a late stage. Superstition, local healers, poverty, illiteracy and ignorance, lack of an effective health education and screening system, and poor distribution of the limited medical resources contribute to this late presentation and death. The high mortality as a result of late diagnosis gives the disease and the medical institutions a bad reputation that in turn deters others from seeking medical help early. Dr. Kamal Eldein Hammed, chair of the scientific committee, presented breast cancer statistics and characteristics of breast cancer in women that were seen at the Radiology and Isotope Center of Khartoum (RICK). Breast cancer constitutes 29-34.5% of all the cancers seen at RICK. Most are women of a young age; with about 40% below the age of 45 years (mean age of 50). Most presented with late advanced disease, only 5-7% presented with stage I and 13-15% presented with stage II diseases. Invasive Ductal Carcinoma compromises about 82% of all breast cancer cases. The majority are moderately to poorly differentiated carcinoma with high incidence of vascular and lymphatic invasion. With regard to the hormonal status majority of breast cancer seen in women in the Sudan are estrogen receptors negative (68%), progesterone receptors negative (70%). Her-2 receptors examination is not done routinely at RICK. However, results obtained from women traveled aboard or who afford the cost of private laboratory showed that 25-30% of women are positive for Her-2 protein. On other hand male cancer constitutes only 3.5-4% of all breast cancer seen at RICK.

Breast cancer status in Gezira state was described by Dr. Dafalla Abu Idris, Associate Professor of Radiation Oncology. Geographically, El Gezira State is south of Khartoum State. At El Gezira State a population-based cancer registry was established in 2007. Sources for the registry are mainly histopathology data obtained from laboratories and the teaching hospital. All cases had lived in Gezira State for at least 15 years or more. The data indicates that breast cancer is the most common cancer among women and it constitutes more than 30% of women malignancies. In the population of Gezira, breast cancer incidences were 13.5 for every 100,000 women and showed an increase from 2007-2010. The median age of women with breast cancer is 50 years and most cases are from the state capital, Wadmadani (30%), followed by southern Gezira and Elhassahisa localities 15.5% and 14.2%, respectively. Roughly 90% of cancers were ductal...
carcinoma. At Gezira State, similar to women seen at RICK, most cases present with stage IV tumors (33.3%), followed by stage III (31.95%). Only about 3% of all breast cancer cases present with stage I disease, and 3.6% have unknown stages. Dr AbuIdris pointed to the fact that the data presented are from patients who only reached the hospitals and therefore they may not accurately represent the cancer burden in the Gezira State. The hope is that the registry will capture all breast cancer cases in Gezira with the initiation of Breast Cancer Control Organization. The organization goal is to raise cancer awareness and advocate early detection at the very least through breast cancer self-examinations.

**The Sudan National Cancer Strategy**

The Sudan National Cancer Strategy for 2012-2016 was presented by Dr Muna Abdel Aziz, Deputy Director of the Public Health Institute. The National Cancer Strategy comes under the National Health Strategy and National Strategy for Non-Communicable Diseases (NCD). The Federal Ministry of Health (NCD Dept.) is leading this work with stakeholders to advocate healthier lifestyles, reducing risk of cancer through prevention and promoting screening and early detection of cancer. The main goals of the strategy are to improve equity, accessibility and quality of services for diagnosis, treatment and palliation.

A taskforce was set up with different partners interested in cancer under the leadership of the Cancer Control Program at the Federal Ministry of Health and the Public Health Institute of Sudan.

**The objectives of the strategy are to:**

a) Reduce the incidence of cancer through primary prevention.

b) Ensure effective screening and early detection to reduce cancer mortality.

c) Ensure effective diagnosis and treatment to reduce cancer morbidity and mortality.

d) Improve the quality of life for those with cancer, their family through support, rehabilitation and palliative care.

e) Improve the delivery of services of cancer control through effective planning, coordination and integration of resources and activities such as educational activities, monitoring and evaluations.

f) Improve the effectiveness of cancer control in Sudan through research and surveillance and the promotion of the National Cancer Registry.

**Sudanese National Cancer Registry:**

The First Sudanese National Cancer Registry was established in 2009. The registry is under the direction of the Federal Ministry of Health and overseen by Dr Intisar Elfadil Saeed, Assistant Professor of Biological Sciences and Epidemiology. The Registry is located in Khartoum. It is a population-based cancer registry that collects incidence data on all cancer patients who reside in or are diagnosed and treated in the whole Sudan. The goal of initiating this registry is to develop a system that will create and maintain local and regional cancer registries and allocate them into a single central and accessible system. The registry uses passive and active case finding to collect the data. The data collection covers about 30 governmental hospitals, 40 private health facilities, and 11 histopathology laboratories in the Khartoum area (that include Omdurman and Bahri). They also include data from RICK, NHL and the cancer center in Gezira. The Center is working diligently to reach every part of the Sudan.

**Cancer Research in Sudan**

Cancer research and its importance in identifying diagnostic modalities suitable in low-middle income countries and therapeutic molecular targets from in-country population was covered by Dr Sulma Mohammed, Associate Professor of Cancer Biology and member of the scientific committee. She argued that the establishment of local cancer research is important in many ways. It enables Sudanese researchers to know as much as possible about the causes, prevention, diagnosis and treatment of cancer in their own
population. Training and equipping Sudanese researchers will help them research local information and discover the best modalities to diagnose and treat Sudanese patients with cancers.

Sudan is a very interesting region as it represents a rainbow of ethnic, social and cultural diversity. Genetic studies suggested that modern life originated in Africa and the area around the Nile may have provided a suitable living condition for the first permanent settlement in Africa. The countries in the Nile basin including Sudan are likely the settings for many critical evolutionary events that led to the significant ethnic and cultural diversity in the region. Because of that, Dr Mohammed focused on understanding breast cancer at the protein and then at gene levels. Using state of the art proteomic and epigenetic, she compared breast cancer in African, American, Sudanese and Cameroonian women to identify molecules that characterize triple-negative tumors in these groups. She hoped to use her research results to identify the underlining causes of breast cancer so as to design personalized preventative and therapeutic strategies to improve the survival of African women with breast cancer around the globe.

Other cancer research studies presented at the meeting were conducted at the Soba Breast Clinic. Prof. Ahmed Hassan Fahal touched on another very important issue — clinical course and treatment of benign breast disease. Prof. Fahal is a surgeon at the Soba Breast Clinic (SBC), Khartoum (est. in 1991). SBC combines both medical and surgical expertise with specialist nursing and paramedical skills aimed at providing the best possible care for patients with breast problems. The fact that many women seek medical help due to some symptoms of breast disease, although few have cancer, created great concerns to women and present a challenge for caring physicians. To discriminate between a benign and malignant lesion is not easy as these lesions can be very diverse. These lesions included giant fibroadenoma, adenomas, papilloma, cystosarcoma phyllodes, abscesses, duct ectasia, fat necrosis and others. The same methods to determine the diagnosis of these conditions are the same used to determine breast carcinoma, creating enormous anxiety within the patients and pressure on the staff. Dr Fahal recommended that close collaboration, discussion and consultation between the breast care team are essential for a proper diagnosis and management of these conditions.

Furthermore, Dr Abdelsamie Abdalla Mohamed, Associate Professor of Surgery at Khartoum University, presented their experience using wide local excision or subcutaneous mastectomy and immediate breast conservation in the management of malignant phyllodes tumors (MPT) in Sudanese women. In this study, 23 recurrent MPT and 10 women with histological evidence of MPT were included. All patients with recurrent MPT had subcutaneous mastectomy, two centimeters wide excision of the scar and immediate breast reconstruction with either Latissimus Dorsi (LD) myocutaneous flap (n=10) or Latissimus Dorsi muscle flap (n=13). Seven of the new patients had wide local excision of the tumor, reconstruction with LD muscle flap, two had wide excision and reduction of contra lateral breast, and one had subcutaneous mastectomy and silicon implant. The margin resection varied 5-15 centimeters in wide resection and subcutaneous mastectomy and the size of tumors varied between 5-15 centimeters. During the follow up period, which ranged between 24-84 months, one local recurrence was recorded (3.03%), but none of the other patients had distance metastasis or regional lymph involvement. This approach has secured wider excision of MPT, offered breast reconstruction, and has reduced the chances of recurrence in the Sudanese patients. The efficacy and patterns of response to
neoadjuvant chemotherapy and its impact on surgery in patients with locally advanced breast cancer was investigated in the National Cancer Institute at Wadmadani Teaching Hospital. The team of investigators included Dr Awad Ali, Ahmed Alsheikh and Ahmed Elhaj. Ninety eight patients with locally advanced breast cancer were treated with neoadjuvant chemotherapy. The clinical response rate was 83%. Roughly 11.2% had a complete remission, 72.4% had partial remission, 13.3% had stable disease and 3.1% had progressed. Following neoadjuvant therapy 33 (33.7%) patients underwent breast conservative surgery and Sixty five (66.3%) had total mastectomy. Of these women 7 (7.1%) attained complete pathological response, 17 (17.3%) demonstrated partial response, and 74 (75.5%) patients showed pathological stable disease. The authors concluded that neoadjuvant chemotherapy can achieve high response in Sudanese patients with locally advanced breast cancer. This protocol enables conservation surgery to be performed on patients who are initially not suitable for this procedure.

Tamoxifen has a therapeutic effect in breast cancer, but also antagonizes estrogen in a low estradiol condition. Consequently, women taking Tamoxifen were found to have endometrial polyps, carcinoma and endometrium hyperplasia. Dr Moawia Elsadig and colleagues conducted research to identify these endometrium changes early in women who were prescribed Tamoxifen for breast cancer treatment at the Khartoum Teaching Hospital. They used transvaginal ultrasound to identifying these changes. A prospective observational study involving patients with breast cancer on Tamoxifen therapy was performed. Women with breast cancer (n=140) at different reproductive ages, ethnicities, and parities were subjected to a transvaginal ultrasound examination of endometrial thickness before and after a six month period of Tamoxifen therapy. Their results showed an average increase of endometrial thickness of 11.2mm. This correlation between Tamoxifen and endometrial was significant. The team recommended that all patients on long term Tamoxifen should regularly be screened for endometrial hyperplasia and possible cancer development. If detected early, these lesions are treatable.

Fine Needle Aspiration Cytology (FNAC) and Core Needle Biopsy (CNB) pros and cons in Sudan were discussed by Dr Ahmed Omer Almobarak, Consultant Cytologist at the University of Medical Sciences and Technology. Despite the success of pathologists confirming and diagnosing breast malignancies using FNAC in developed nations, low sensitivity, specificity, and accuracy of FNAC were reported in Sudan. This may be due to the fact that there is no formal training in pathology for clinical medical students. From his experience as a cytologist, Dr Almobarak recommend using FNAC as it is faster, less costly and better tolerated by patients compared to CNB. However, he emphasized that pathologists must receive appropriate training in both sampling and data interpretation. Building on the findings of Dr Almobarak & Dr Ahmed El Howeris from the University of Medical Science and Technology, examined the utility of preparing paraffin blocks from these aspirates in identification of hormone receptors expression. He concluded that cell block technique is useful for evaluation of hormone receptors (ER, PR) status using these biopsies.

Breast self-examination is very important and may be the only means for identifying breast cancer at early stages in low- and middle-income countries in sub-Saharan Africa. Public awareness and education in self-examination can have tremendous impact on early identification, diagnosis, treatment and consequently survival from breast cancer. This important topic was discussed by Dr Eman
Mukhtar and her colleagues from School of Health Sciences at the Ahfad University for Women Studies. Dr Mukhtar presented her study to assess knowledge, attitudes, and practices of breast self-examination among women in Khartoum and River Nile States. They reported that women with a higher level of education or a family history of breast cancer were more likely to self-examine. However, there were no significant connections between practicing self-examination and age, occupation, economic and social status, knowledge of breast cancer symptoms. At the end of her talk the author recommended establishing a national education and prevention program regarding breast cancer in Sudan.

"Mammography: When and Why?" was an interesting talk given by Dr Hania Fadl, chair and consultant breast radiologist at the Khartoum Breast Care Center. Dr Fadl is the founder of the 15 million dollar Breast Care facility in Khartoum. Mammography has now become the mainstream technology for breast cancer screening in the developed world. However, knowledge, attitudes, and most importantly, the cost of mammography screening make this technology not feasible for most Sudanese. Availability of the machines and trained technologists is another issue. From her experience, Dr Fadl discussed the important issue of what age women should be screened. Like the rest of Africa, Sudanese women present with fast growing aggressive breast cancer at younger age.

Role of the media in the Awareness of breast cancer

The media continues to play an important role in health awareness. Social media, specifically, emerged as a means by which information and education about cancer health can spread rapidly, especially among younger generations. Social media has changed the landscape in every aspect of life including health care. Valuable health information can now move very quickly, connecting women to cancer information, support groups, and treatment resources. Some of these venues and their role in cancer awareness in Sudan were presented by Ms. Ikhlass Nimir, Journalist for the Sahafa Daily News. Ms. Nimir highlighted the importance of the media in breast cancer awareness, early detection, and prevention. She also emphasized that the media should focus on clarifying misconceptions. She then recommended Sudanese media such as TV and newspapers provide a platform for breast cancer discussions that bring experts in cancer control to teach the public about symptoms, how to seek help and care for sick ones.

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