

Study finds more women in oil-rich Gulf countries battle with breast cancer

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Breast cancer incidence has surged in the oil-rich Gulf (GCC) states, with the disease developing its own localized clinical and pathological features, setting them apart from those found in women with breast

cancer in western countries, a study published in the journal [Frontiers in Oncology](#) finds.

The study attributes the hike to the nature of menstrual cycle of [women](#) in these countries, hereditary factors, weaning children earlier than expected, prevalence of hormonal treatment, obesity, and use of contraceptives.

The research is authored by a panel of nine oncologists from four countries—Kuwait, Saudi Arabia, Qatar and the United Arab Emirates (UAE), which along with Oman and Bahrain comprise the GCC. The panel was led by Humaid O. Al Shamsi, Oncology Professor at Sharjah University's College of Medicine, and Ajman University.

The study is based on an analysis of [BRCA1 and BRCA2](#) of GCC women diagnosed with [breast cancer](#). BRCA1 and BRCA2 are genes of which every human being has two inherited copies, one from each parent. The proteins they produce help repair damaged DNA.

The panel of GCC oncologists initially met in March 2023 to discuss the gaps they and colleagues come across when observing their clinical practices and treating women with breast cancer in the four GCC states. The results of the expert panel opinion and recommendation were published on 25 April 2024.

When investigating BRCA1 and BRCA2 of women with breast cancer in the GCC, the oncologists have them paralleled and compared with counterparts in the west. They report that breast cancer in women in both regions has developed disparate pathological features that require different diagnosis, therapy, and treatment.

They refer to varieties in DNA, RNA and proteins, elements that determine the genetic composition of cells or tissues as well as age of breast cancer onslaught, cancer grade and acid residues regulating cell proliferation of the disease.

They write, "Compared to the Western population, BCs [breast cancers] have diverse clinical, pathological and molecular features including [early onset](#), higher tumor grade, higher human epidermal growth factor receptor (HER)2 amplification rate, more aggressive subtypes and a lower rate of luminal subtype, in the GCC population."

The authors' intent is "to gain insights into the evolving treatment paradigm in germline BRCA-mutated early-stage BC. The panel discussed the available data on disease burden, BRCA mutations (BRCAm), BRCA testing, and management practices along with associated challenges specific to their region."

They present statistics showing that breast cancer is the most prevalent of cancerous diseases in the GCC, and the main cause of cancer death among women "with an age-standardized incidence rate of 34.4 per 100 000 and a mortality rate of 10.6 per 100 000 in 2020."

Over time, there has been a steady increase of breast cancer among women, the authors note, adding, "Hereditary factors are responsible for around 10% to 30% of BC cases (3) and 16% of these hereditary cases are related to germline mutations in BReast CAncer gene (BRCA)1 and BRCA2 genes.

"Other factors such as early age menarche, later age at menopause, shorter breastfeeding periods, use of oral contraceptives or hormonal therapy, dense breasts, and older age are found to be associated with increased risk of BC."

The high rate of women dying of breast cancer in the GCC is attributed to late stage at which the disease is identified with evidence suggesting "approximately 46.2% to 54% of BC patients are diagnosed at advanced disease stage, 23.3% to 28% are diagnosed with localized tumors while 2% with in-situ carcinoma.

"In the GCC region, the vast majority of BC cases (82.1% to 93%) have invasive ductal carcinoma (IDC), and 19.2% to 29.5% have HER2 overexpression, while 14.3% to 26.9% have triple-negative BC (TNBC)."

One important divergence when comparing women with breast cancer in the GCC with counterparts in western countries is the age at which they are diagnosed with the disease which is "at least a decade younger in the GCC population compared to the western population." The average age in the GCC for women is 48 compared to 60 in Western countries.

There are also marked differences in [survival rates](#). The 5-year overall survival rate for women with stage one breast cancer is reported in the study at 99% and stage two at 86%. "The 5-year survival rate in the GCC region ranges between 63% and 89%, with the highest 5-year survival rate being reported in the United Arab Emirates (UAE) and the least being reported in Bahrain," the authors say.

Regarding the cumulative danger of developing breast cancer, the authors note that women at age 70 risked being diagnosed with BRCA1 or BRCA2 carriers. "Identification of BRCA mutation in a woman diagnosed with BC may have an impact on both prognosis and treatment—especially it influences the extent of surgery such as the choice of breast-conserving surgery (BCS) or contralateral mastectomy, also predicts the effectiveness of platinum-based chemotherapy and poly (ADP-ribose) polymerase (PARP) inhibitors."

BRCA identification, the authors add, assists oncologists to make the right decision in relation to the "region-specific guidelines" and help health care providers to administer effective therapies. The research, the authors go on, provides data "on the epidemiology of BC, BRCA mutations, practices, and challenges associated with BRCA testing in the GCC region."

In their discussion and conclusion, the authors come up with a host of recommendations on how to "enhance BRCA testing in early-stage BC in the GCC region. Additionally, members of the panel also provided recommendations for developing a treatment algorithm for BRCA-mutated early-stage BC ... based on the published literature and expert clinical opinion."

The authors maintain that despite the advances made in combating breast cancer in the GCC and the availability of modern treatment methods, the region is still in need of more improvements to reach standards attained by western countries.

The experts' key recommendations include making Breast Conservative Surgery (BCS) –for most patients with BRCA-mutated early breast cancer—accessible across the region to ensure good cosmetic outcomes.

Other propositions include postoperative care, prophylactic measures which help oncologists with decisions for the removal of healthy breasts as prevention of affliction with cancer as well as rendering Adjuvant Therapy accessible to breast cancer patients once completing chemotherapy and other primary treatments to lower the chance of the disease returning.

More information: Humaid O. Al-Shamsi et al, BRCA testing and

management of BRCA-mutated early-stage breast cancer: a comprehensive statement by expert group from GCC region, *Frontiers in Oncology* (2024). [DOI: 10.3389/fonc.2024.1358982](https://doi.org/10.3389/fonc.2024.1358982)

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