The OVANORDEST project: making an impact on ovarian cancer in Morocco

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In Morocco, the latest findings of the global cancer burden project (GLOBOCAN) have revealed that ovarian cancer is the third most common gynecological cancer and holds the same position in terms of mortality among reproductive tract malignancies.[1] Our recent bibliometric analysis of ovarian cancer research in Morocco has highlighted numerous issues in terms of clinical research focusing on this particularly aggressive form of women's cancer.[2] Indeed, the findings of our study have shown that there is no original research on ovarian cancer. Instead, the majority of the analyzed literature consists of low-impact case reports, lacking a substantial impact on patient care or health policy development.[2] Overall, this scarcity of research in the epidemiological, clinical, and pathological aspects of ovarian cancer in Morocco can be attributed to factors common in resource-limited countries, including insufficient funding, inadequate training for healthcare professionals in conducting clinical research, and a lack of research initiatives in gynecologic oncology.

To address this, our team developed the OVANORDEST ('OVAire dans le NORD-EST'—ovarian cancer in the North-East of Morocco) project, which is a three-step plan aimed at pioneering research on ovarian cancer over a period of 14 years (outlined in detail by El Bairi et al[3] and in Figure 1). In a real-world study of this project (currently under review), we have developed an electronic database from archived medical records of patients with ovarian cancer to provide insights into the epidemiological landscape, clinical-pathological trends, and survival outcomes in this under-resourced region of Morocco known for the markedly young age at which breast cancer is diagnosed.[4]

Our study (n=255) was conducted in the only regional specialized oncology facility available in this region and covered a period of 17 years (2006–2020). Among the study population, 12.4% had a family history of breast and ovarian cancers. Surprisingly, only one patient had genetic testing. This patient was in her 40s with a family history of breast cancer who presented with International Federation of Gynecology and Obstetrics (FIGO) stage IIIc serous adenocarcinoma of the ovary. During her initial management at our department, she was offered genetic counseling for *BRCA1*, *BRCA2*, and other inherited mutations in a private clinic due to its inaccessibility at our university hospital. Despite the familial predisposition to breast and ovarian cancer, the patient tested negative for key predisposing genes.

Remarkably, this real-life narrative emphasizes the significant limitation of access to genetic testing in under-resourced settings and underscores the complexities of hereditary cancer risk assessment in such environments. Genetic testing, specifically for *BRCA* mutations in ovarian cancer, plays a pivotal role in identifying individuals at risk and delivering personalized therapeutic

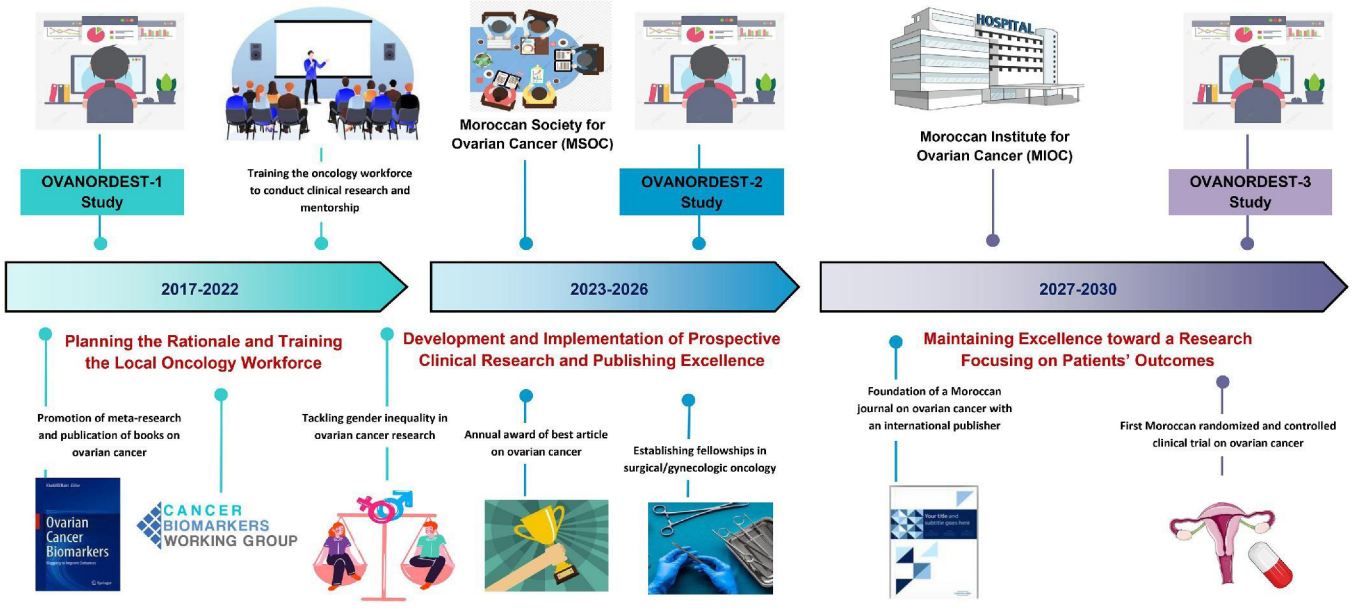

Figure 1 Global overview of OVANORDEST project (El Bairi et al[3]). Reproduced without modification under a CC BY 4.0 license.

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strategies such as PARP (poly (ADP-ribose) polymerase) inhibitors. However, as our recent study in Morocco depicted, the unavailability and unaffordability of genetic sequencing pose considerable barriers for patients and their doctors in providing effective preventive and therapeutic approaches. Local financial commitments can present challenges in establishing sequencing laboratories, which require considerable investments in specialized equipment, reagents, and trained human resources. It is also often observed that healthcare funding for medical genetics departments competes with other prioritized pressing needs in other fields such as access to anticancer drugs. Thus, allocating funds to establish genetic testing facilities might not be a top priority for Morocco at the current time. The situation of Morocco is not an isolated case but rather exemplifies a global issue of unaffordability of genetic sequencing in resource-limited settings. While developed (high-income) countries harness the power of genetic testing to personalize treatment decision-making, low- and middle-income countries continue to wrestle with financial constraints that hinder progress.[5]

Our case underscores the urgent need for expanded availability of genetic testing to ensure personalized management for individuals at risk. This is crucial due to the significant clinical implications for cancer care when identifying a pathogenic variant. No woman with ovarian cancer should be left behind due to global economic disparities. The progress we have made through our individual project, the OVANORDEST project,[3] gives us hope for increased attention to ovarian cancer from the Ministry of Health and cancer organizations. This is particularly important for research with a direct impact on clinical care.

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Contributors Study design: KE. Data acquisition: KE. Manuscript writing: KE. Manuscript review: OAJ and SA.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Commissioned; internally peer reviewed.

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To cite El Bairi K, Al Jarroudi O, Afqir S. *Int J Gynecol Cancer* Published Online First: [please include Day Month Year]. doi:10.1136/ijgc-2023-004892

Accepted 30 August 2023
Int J Gynecol Cancer 2023;**0**:1–2.
doi:10.1136/ijgc-2023-004892

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