Global burden of gynecological cancers

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ABSTRACT
Gynecological cancers include malignant tumours arising from reproductive organs in women including ovaries, uterus, vagina vulva, and cervix. Cervical cancer is reported to be the most common cancer while the vagina is reported to have the lowest incidence all around the world. According to the World Health Organization report Asia has the highest rate of gynecological cancers followed by Africa, Europe, Latin America, North America, and the lowest rate is observed in Oceania. The rate was predicted to rise in the upcoming years. Thus appropriate strategies are needed to be adopted to control disease outcomes and adopt preventive strategies.

Key Words: Gynecological cancers, global burden

INTRODUCTION

Gynecological cancers include a group of malignant tumours arising from ovaries, uterus, vagina, cervix, and vulva. This also includes cancers arising from fallopian tubes but it is very rare. These are exclusively women's cancers, and given their anatomical location, these cancers are diagnosed late resulting in poor survival with exception of cervical cancer where screening is available with a chance of early diagnosis. Gynecological cancers accounted for 671 875 reported deaths in 2020. The incidence and mortality are predicted to be doubled by 2040. This editorial aimed to discuss the current global burden of gynecological cancers, future predictions, and discuss strategies to prepare for this upcoming major health issue(1,2).

Figure 1 presents reported rates of gynecological cancers in all continents, where cervical cancer remains at the top among Asian, African and, Latin American populations while in Europe and North American regions and Oceania uterine cancer has been observed to be the most common malignancy. Region-wise distribution of cancers is given in Figure 2 and 3. Cervical cancer not only shows high incidence but high mortality is also being reported due to cervical cancer. It can be debated that the high incidence of cervical cancer could be reported due to national screening programs, but looking at the high incidence among Asian and African women it doesn't seem to be applicable due to the lack of nationwide screening facilities in Asia and Africa. There is another point worth mentioning here that these are the reported cases or those who seek treatment; but among Asian and African women it is also important that patients who were registered at a cancer hospital were the cases included here in statistical data, with a potential chance of excluding those patients who remained undiagnosed or did not reach cancer hospitals for treatment. Given the limited resources in many Asian and African countries, many women die of cancer without getting appropriately diagnosed. Also due to the anatomical location of the reproductive organs of women, these tumours grow bigger without producing any specific signs or symptoms of cancer resulting in late diagnosis and high mortality. Till to date, cervical cancer was the exception where screening is possible. However ovarian mass can be easily diagnosed on ultrasound; a non-invasive easily available facility which can be potentially used for early diagnosis. However, results of the studies testing per-vaginal ultrasound and additional serum level of CA125 could not show promising results due to the high rate of false positives(3,4). Though there is a potential chance of influence of operative dependency of ultrasound.

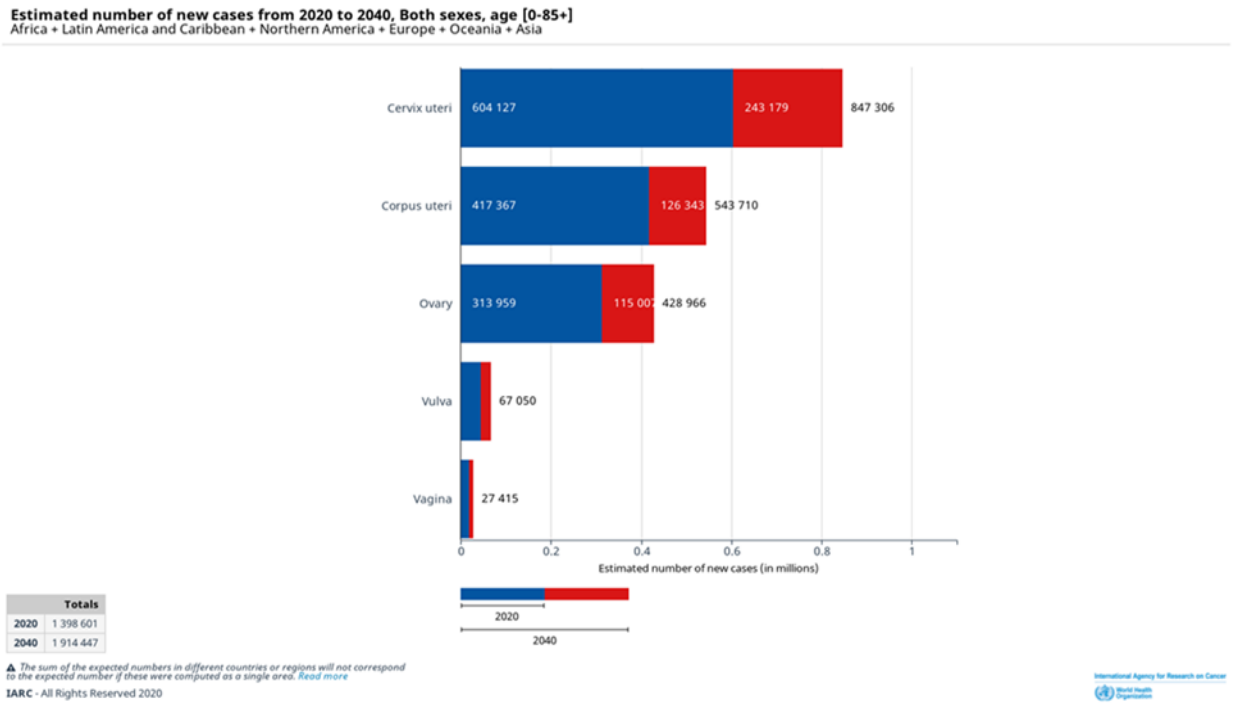

Figure 1: Distribution of Gynecological cancer- Globocan data(2) (adopted from Globocan 2020 data)

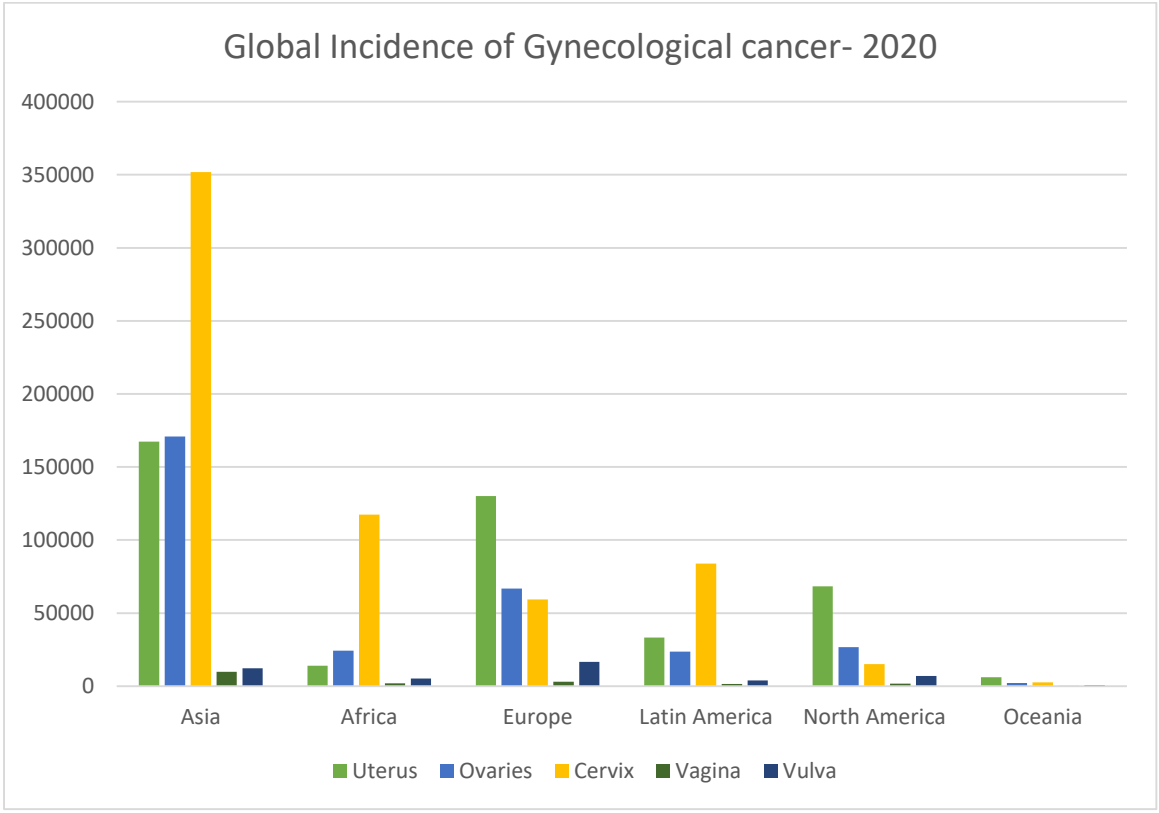

Figure2: Global Incidence of Gynecological cancers- 2020(2) **(adopted from Globocan 2020 data)**

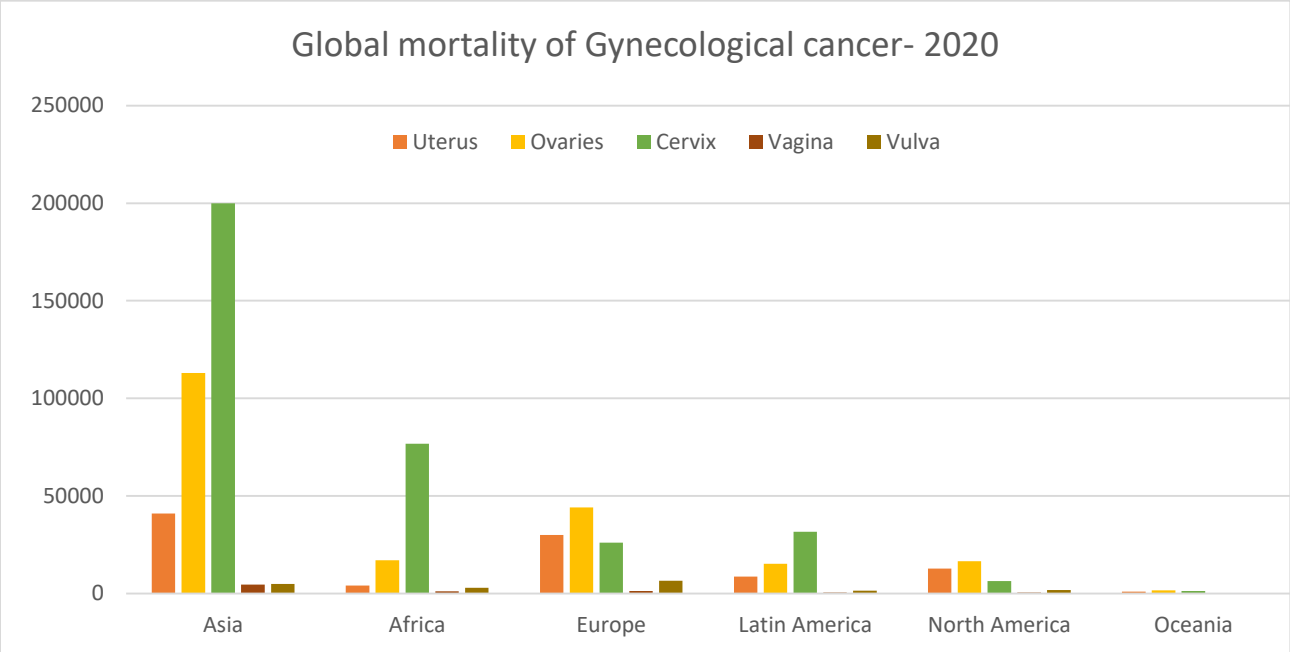

Figure 3: Global mortality of Gynaecological cancers- 2020(2) **(adopted from Globocan 2020 data)**

Ovarian cancer has shown an association with BRCA genes mutations, which is a known risk factor. Thus a combination of ultrasound, serum markers, and genetic testing can potentially provide a robust screening and prediction system for ovarian cancer. Thus instead of just one modality; if other markers are added in combination with genetic testing will increase its sensitivity and specificity. Serum analysis and vaginal – abdominal ultrasound may also be tested.

According to WHO prediction, the rate of gynecological cancers will be doubled by the year 2040 (Figure 4). The highest rise is again expected in cervical cancer worldwide where Asia will face more than 40% rise. The health care system among Asian and African countries is not yet ready to bear such a huge burden.

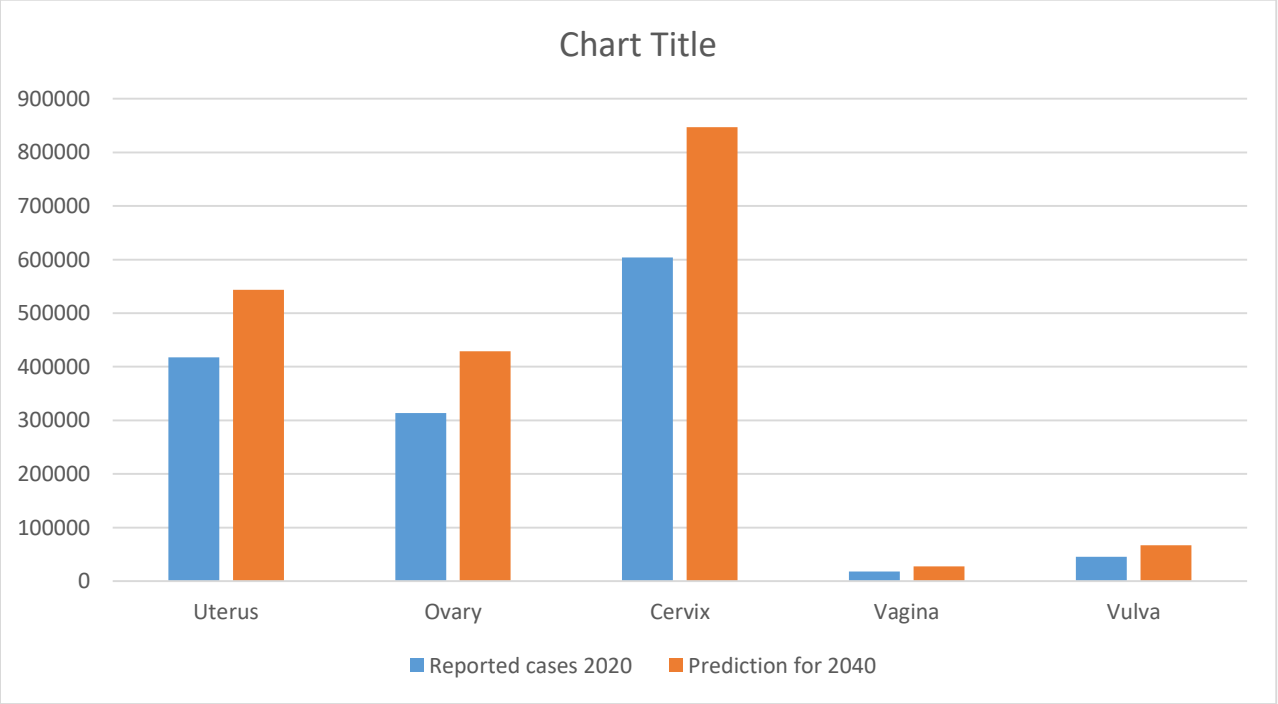

Figure 4: Current incidence (ie 2020) and predicted rise by 2040 in gynaecological cancers(2) **(adopted from Globocan 2020 data)**

Thus it is important to understand the upcoming major health issue. A few measures need to be taken by all the governments and health care organizations:

1. **Establishment of cancer registries**

   In most of the developing countries cancer registries are not yet established in their true spirit even if established they are not fully functional. Lack of trained personnel to establish and run the registry is one of the major issues faced by most developing countries. Therefore, in this regard developed countries may volunteer their services in providing human resource training and facilitation in establishing the registry. The developing countries on the other hand should also come forward and seek help from countries where cancer registries are fully functional.

2. **Understanding of clinical course and biology of cancer at national level**

   Since cancer is a heterogeneous disease, showing a differing pattern of clinical course and biology according to the age and race. Thus an understanding of cancer biology is of utmost importance to develop appropriate treatment guidelines. Understanding biology and biological mechanisms will lead to the identification of novel therapeutic targets.

3. **Development of new therapeutic agents**

   Since most cancer therapy options are very costly thus the rising rate of cancer will not only affect individuals, family units but also pose a huge economic burden on countries. Developed countries have established centers and enough budget to control and further expand resources, but developing countries with limited resources will not be able to bear such a huge burden. Thus the development of local low-cost drugs and targeted therapies will help them to be abreast with such upcoming major health issue.

Conclusion

Gynecological cancers are predicted to be doubled in the upcoming years, it is therefore recommended to understand its epidemiology, development of cancer registries, understanding of cancer biology and provision of new economical treatment/ therapeutic options.

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