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MODERN VIEW ON THE PROBLEMS OF ACCOMPANYING THERAPY IN GYNECOLOGICAL ONCOLOGICAL PATHOLOGY. Epidemiology of gynecological oncology pathology (Review article)

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Abstract

According to GLOBOCAN2020, cervical cancer, ovarian cancer and uterine cancer are among the ten most common cancers in women worldwide. Many studies have shown a positive correlation with age for all four types of female cancer. Due to future demographic changes, including falling parity and the aging of the baby boom generation, the average age in some countries will continue to rise. In the United States, the incidence of ovarian cancer is estimated to increase by 37%, from 20,921 cases in 2020 to 28,591 cases in 2030.

Keywords: ovarian cancer, uterine cancer, female cancer

Introduction

According to the GLOBOCAN2020 project, cervical cancer, ovarian cancer and uterine cancer are among the ten most common cancers in women worldwide (FIGO Committee on Gynecologic Oncology. 2019; Amit A., Schink J., Reiss A. et al. 2011; Shepherd J. H., Spencer C., Herod J., Ind T. E., 2006). Many studies have shown a positive correlation with age for all four types of female cancer. Due to future demographic changes, including falling parity and the aging of the baby boom generation, the average age in some countries will continue to rise. In the United

States, the incidence of ovarian cancer is estimated to increase by 37%, from 20,921 cases in 2020 to 28,591 cases in 2030 (Ramirez P., Frumovitz M., Pareja R. et.al., 2018; Elliott P., Coppleson M., Russell P. et al. 2000; Whitney C. W., Sause W., Bundy B. N. et al.; Radzinsky V. E., Ordians I. M., Abdurakhmanova M. B., Zhang Q. et al. 2017). This increase in ovarian cancer cases is mainly attributed to changes in age distribution and population growth (Elliott P., Coppleson M., Russell P. et al. 2000). Given the aging trend, the burden of women's cancers may continue to increase in the coming decades.

Cervical cancer in regions with a low socio-demographic index is the most common gynecological cancer. Relatively, ovarian cancer and uterine cancer were more common in regions with a high socio-demographic index. Female cancer causes numerous deaths worldwide and places a heavy economic burden on women and their families. With global population aging, international efforts are needed to reduce cancer incidence and mortality among women and improve women's health. Although cervical cancer can be prevented through HPV vaccination and screening for precancerous lesions, the incidence and mortality of cervical cancer in these counties is still high due to lack of necessary medical interventions (Huang H., Liu J., Li Y. et al.; Sedlis A., Bundy B.N., Rotman M.Z. et al.; Morris M., Eifel P.J., Lu J. et al. 1999; Whitney C.W., Sause W., Bundy B.N. et al. 1999; Lanciano R.M., T.F., Martz K., Hanks G.E. 1993). Compared to cervical cancer, ovarian cancer and uterine cancer are less common worldwide (Lorusso D., Petrelli F., Coinu A. et al. 2014; Pötter R., Haie-Meder C., van Limbergen E. et al., 2006). Overall, the incidence and mortality of the four types of cancer in women has continued to rise over recent decades.

Epidemiological patterns of cancer in women vary between regions and change over time. Systematic analyzes that comprehensively reflect trends in cancer incidence in women help policymakers measure the burden of cancer in women, build health care infrastructure, and allocate public health resources. In this cross-sectional study, we reported the incidence, mortality, and disability-adjusted life years of female breast cancer, cervical cancer, ovarian cancer, and uterine cancer from 1990 to 2019 in 204 countries. In addition, we analyzed the correlation between the morbidity or mortality rate and the sociodemographic index (Webb J.C., Key C.R., Qualls C.R. et al., 2001; Kvetnoi I., Kvetnaya T., Bocharova K. 2014).

Main part

In the Cervical Cancer Study, age-standardized incidence, mortality, and DALY rates were negatively correlated with the sociodemographic index. Relatively, morbidity and mortality rates were significantly higher

in these low-source countries. Carcinogenic HPV infection has been confirmed to be the main cause of cervical cancer (Maltseva A.N. 2018; Rogovskaya S.I. 2013; Rodríguez A.C., Schiffman M., Herrero R. et al., FIGO Committee on Gynecologic Oncology. 2019; (Maltseva A.N. 2018; Rogovskaya S.I. 2013; FIGO Committee on Gynecologic Oncology. 2019). In recent decades, due to the introduction of HPV vaccination and HPV-based screening, the incidence of cervical cancer has continued to decline (FIGO Committee on Gynecologic Oncology. 2019; Radzinsky V.E., Ordiyants I.M., Abdurakhmanova M.B. 2018). Also, based on microscopic examination of cervical scraping smears, treatment of precancerous lesions is secondary prevention of cervical cancer (Orazov M.R., Radzinsky V.E., Khamoshina M.B., Nosenko E.N., Dukhin A.O., Tokaeva E.S., Barseghyan L.K., Shkreli I., Marapov D.I., Simenel D.A., Nizhnik A.N. 2018). However, in some developing regions, such as southern sub-Saharan Africa, most women find it difficult to access effective interventions (Orazov M.R. and other 2018). Thus, it is critical to implement basic population prevention and screening programs in these regions, including the introduction of vaccination, screening for cervical cancer and precursor lesions. It is estimated that implementation of the WHO cervical cancer assessment strategy could significantly reduce cervical cancer mortality by 99% over the next century (Amit A., Schink J., Reiss A. 2011). Literature data have shown that the incidence of ovarian cancer varies depending on geographic location and is positively associated with the value of the socio-demographic index. Less breastfeeding, infertility or absence of pregnancies, hormonal treatment and obesity are risk factors for ovarian cancer (Bermudez A., Bhatla N., Leung E. 2015). In contrast, oral contraceptives are a strong protective factor against ovarian cancer (Kjaer S.K., Frederiksen K., Munk C., Iftner T. 2010; Kaprin A.D., Starinsky V.V., Petrova G.V. 2019; FIGO Committee on Gynecologic Oncology. 2019).

Previous studies have shown that oral contraceptives may inhibit carcinogenesis by interfering with estradiol production and reducing menstrual cycle estradiol ex-

posure (Usmanova E. B., Obukhova O. A., Shchelkova O. Yu. 2020; Thornquist C. 2018; Rodríguez A. C., Schiffman M., Herro R. 2010). The high incidence of ovarian cancer in regions such as Western Europe and North America may be due to the high prevalence of these risk factors. In some developed countries, including the United States, the decline in incidence has been accompanied by a decline in mortality over the past 30 years. The development of treatment methods for ovarian cancer, including targeted therapy, neoadjuvant chemotherapy, intraperitoneal chemotherapy, and aggressive surgery, helps reduce the mortality rate of gynecological cancer (Webb J. C., Key C. R., Qualls C. R. 2001; Ramirez P., Frumovitz M., Pareja R. 2018).

Conclusion

The incidence of uterine cancer is increasing throughout the world, especially in regions with high socio-demographic index

levels. According to GBD2019, the age-standardized incidence rate of uterine cancer in the United States increased from 19.63 in 1990 to 28.80 in 2019. Obesity has been a vital risk factor contributing to the increased incidence of uterine cancer (Solopova A. G., Idrisova L. E., Vlasina A. Yu., Moskvicheva V. S. 2018; Kim H. S., Sardi J. E., Katsumata N. 2013; Gupta S., Maheshwari A., Parab P. 2018; Tian Zhong-ze, Li Sha, Wang Yue 2014). Women who are overweight or obese are more likely to develop uterine cancer than women of normal weight (Lorusso D., Petrelli F., Coinu A. 2014; Morley G. W., Hopkins M. P., Lindenauer S. M. 1989). In addition, decreased physical activity and a higher prevalence of diabetes are also risk factors for uterine cancer (Mabuchi S. 2016; Maltseva A. N. 2018; Wang S. 2010; Sapienza L. G. 2018). Public health programs that help women maintain a healthy weight and increase physical activity can reduce the risk of uterine cancer.

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