**Commentary**
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# Etiology, Risk and Metrics in Ovarian Cancer

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## Description

Ovarian cancer is the fifth most frequent kind of cancer and the second leading cause of mortality in women worldwide today. Today cancer is recognized as a complicated array of various illnesses, each with its own genetics and behaviour. Understanding the genetic modifications that are characteristic of cancer necessitates the development of a fully revolutionary study and a main cause of gynecological illness. According to Globocan 2008 and IARC statistics, ovarian cancer is the fifth most prevalent malignancy and the fifth leading cause of cancer-related death and morbidity in females.

As an example of a developing nation, India has recorded around 28,080 new cases and 19,558 fatalities per year from ovarian cancer. Furthermore, every fifth death from ovarian cancer occurs in India, which is a highly worrying indication, and the need of the hour is to neutralize this threat. Ovarian cancer is a silent killer in women, caused by a succession of DNA changes in a single cell or clone of that cell, resulting in the loss of normal function, aberrant or uncontrolled cell development, and frequently metastasis. Because the symptoms appear late and are unclear, the survival rate is quite poor. Gynecological problems are becoming more common in both developed and developing nations.

As a result, existing risk factors alone cannot explain the present growing trend since a plethora of additional variables are implicated in the causation of cancer, emphasizing the need for a new paradigm to be investigated to understand the aetiology of ovarian cancer. Furthermore, in addition to the established risk factors, pesticides such as phenoxy acid herbicides, 2,4,5-trichlorophenoxyacetic acid, lindane, methoxychlor, toxaphenealdrin, dieldrin, endosulfan, Hexachlorocyclohexane (HCH), and 1,1,1-trichloro-2,2-bis(4-cholorophenyl) ethane have been linked to various cancer (DDT).

Organochlorine pesticides account for 40% of all pesticides used in India (OCPs). These molecules are lipophilic, stable, and have a half-life of decades. As a result, these chemicals get concentrated in the environment and are continually identified in humans as a result of environmental exposure. OCPs are carcinogenic owing to their oestrogen mimicking activity. They behave as an antagonist or agonist, disrupting endocrine function, and so are referred to as endocrine disruptors or xenoestrogens.

The aetiology of ovarian cancer may be manifested by faulty signal transductions and molecular processes. OCPs have been linked to a variety of ailments including asthma, allergies, obesity, diabetes, hypersensitivity, fetal development, and neurological abnormalities. Its involvement in many cancers has also begun to be unraveled, showing that environmental pollutants have long been assumed to be related with cancer due to the widespread use of OCPs and may support to be one of the reasons for pathogenesis.

OCPs have a role in a variety of malignancies, including breast, testicular, endometrial, and prostate cancer. It has been proposed as a risk factor, although little light has been shed on the relationship between such exposure and the genesis of ovarian cancer. As a result, the involvement of OCPs in the origin of ovarian cancer has remained a mystery, necessitating further research. Ovarian cancer is often hormone-dependent and begins with the transformation of cells that compose the ovaries, including surface epithelial cells, germ cells, and the sex cord or stromal cells. Despite extensive investigation, the cause of most hormone-related malignancies remains unknown.

Hormones appear to be required for the formation of malignant tissues, although their role in the early stages of carcinogenesis remains unknown. The majority theories of carcinogenesis attribute the ultimate cause of cancer to mutations, yet most hormones are not significant mutagens.

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