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Research Article

**INTER RELATIONSHIP OF MICRONUTRIENTS IN THE
PROGNOSIS OF OVARIAN CANCER AT STAGE II****Dr. Munzaleen Javed¹, Rukhsar Zubair², Mehwish Saleem²**¹House officer in Fouji Foundation Hospital, Islamabad²Shifa College of Medicine/Shifa International Hospital, Islamabad**Article Received:** June 2020**Accepted:** July 2020**Published:** August 2020**Abstract:**

Ovarian cancer has a distinctive biology and behaviour at the clinical, cellular and molecular levels. The main objective of the study is to find the relationship of micronutrients in the prognosis of ovarian cancer at stage II. This descriptive study was conducted in Holy Family/Benazir Bhutto Hospital, Rawalpindi during January 2020 to June 2020. The confirmed cases of ovarian cancer were selected for this course of study. This study was conducted by the approval of ethical committee and with the permission of patients. We collected the 5cc blood sample of patients for the analysis of micronutrients in ovarian cancer patients. The analysis of blood micro and macro nutrients shows that there is a huge difference in control group and patients. The level of nutrients gets reduced in patients as compared to control and healthy group. The low levels of nutrients shows that it leads to many complications as well. With so many things going on while battling ovarian cancer female, it's challenging to pay attention to nutrition. It is concluded that quality of life is very much important in ovarian tumor therapies. The level of nutrients gets reduced due to tumor that's why it is necessary to maintain the normal values of nutrients. So that patient may survive with better quality of life.

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INTRODUCTION:

Ovarian cancer has a distinctive biology and behaviour at the clinical, cellular and molecular levels. Clinically, ovarian cancers often present as a complex cystic mass in the pelvis. Although ovarian cancer has been termed the 'silent killer', more than 80% of patients have symptoms, even when the disease is still limited to the ovaries. These symptoms are, however, shared with many more common gastrointestinal, genitourinary and gynaecological conditions and have not yet proved useful for early diagnosis [1]. Metastases can occur through lymphatics to nodes at the renal hilus or through blood vessels to the parenchyma of the liver or lung. Most frequently, small clusters of cancer cells are shed by the ovary and implant on the peritoneal surface, forming numerous nodules [2]. For cancer in the ovary, unlike cancers at many other sites, no anatomical barrier exists to widespread metastasis throughout the peritoneal cavity. Tumour implants block lymphatic vessels that pass through the diaphragm, preventing the outflow of ascites fluid that leaks from disordered tumour vessels in the presence of high levels of tumour-derived vascular endothelial growth factor A (VEGFA), which is a vascular permeability factor. Antibodies that neutralize VEGFA have decreased the accumulation of ascites in animal models and in clinical studies [3].

Globally, around 300,000 new cases and 185,000 deaths occur each year, making ovarian cancer the eighth most common cause of death in female cancer, and the second most common cause of death in gynecological cancer (after cervical cancer). The prognosis of ovarian cancer is generally poor, with a 5-year survival rate of only 48% after diagnosis. In contrast, the 5-year survival rate of breast cancer is 90% [4]. Despite advances in modern medicine, the survival rate of ovarian cancer has changed little over the decades, even in the resource-rich countries such as the United States and Canada. These frustrating figures are in part due to the lack of effective screening tests for early detection of ovarian cancer and the lack of early, specific symptoms that result in diagnostic delays [5]. Given the limited success of secondary prevention strategies and high cure rate of early-stage disease, at present, the best opportunity for disease control and even cure might be at primary prevention. Stratified analyses across clinically distinct

histotypes are necessary for prevention and treatment of ovarian cancer. Ovarian epithelial tumours can be classified according to the following histological subtypes: serous, mucinous, endometrioid, clear cell, transitional cell, Brenner, small cell, mixed mesodermal and undifferentiated. Usually each subtype can be classified as benign, borderline (low malignant potential, LMP) and malignant (invasive), in which the prognosis of invasive epithelial ovarian cancer is generally poorer [6].

The main objective of the study is to find the relationship of micronutrients in the prognosis of ovarian cancer at stage II.

METHODOLOGY OF THE STUDY:

This descriptive study was conducted in Holy Family/Benazir Bhutto Hospital, Rawalpindi during January 2020 to June 2020. The confirmed cases of ovarian cancer were selected for this course of study. This study was conducted by the approval of ethical committee and with the permission of patients. We collected the 5cc blood sample of patients for the analysis of micronutrients in ovarian cancer patients. Commercially available Randox kits were used for the analysis of micronutrients in the blood of patients. Blood samples were collected into EDTA tubes from fasting patients. The blood was centrifuged and indomethacin and butylated hydroxytoluene was added into the plasma samples before they were to be stored at -80°C until analysis.

Statistical analysis

Student's t-test was performed to evaluate the differences in roughness between group P and S. Two-way ANOVA was performed to study the contributions. A chi-square test was used to examine the difference in the distribution of the fracture modes (SPSS 19.0 for Windows, SPSS Inc., USA).

RESULTS:

The analysis of blood micro and macro nutrients shows that there is a huge difference in control group and patients. The level of nutrients gets reduced in patients as compared to control and healthy group. The low levels of nutrients shows that it leads to many complications as well. With so many things going on while battling a ovarian cancer female, it's challenging to pay attention to nutrition.

Table 01: Statistical analysis of micro and macro nutrients of patients and control group

Group Statistics					
	group	N	Mean	Std. Deviation	Std. Error Mean
Vit_A	control	10	1.9743	91.729355	29.007369
	patients	17	7.89106	69.624623	16.886451
Vit_C	control	10	2.41350	1.242764	.392996
	patients	17	1.06559	.386902	.093838
Vit_E	control	10	8.33150	.946245	.299229
	patients	17	2.47400	.798902	.193762
Zn	control	10	9.71250	11.703929	3.701107
	patients	16	6.16988	21.376463	5.344116
Fe	control	10	8.89530E1	3.331970	1.053661
	patients	16	9.10994E1	14.039887	3.509972
Mn	control	10	6.40500	1.709121	.540472
	patients	16	5.20250	1.391165	.347791
Se	control	10	6.55662E1	20.104143	6.357488
	patients	16	6.65813	1.943839	.485960
Cu	control	10	7.72700	3.199792	1.011863
	patients	16	8.75406E1	19.200278	4.800070

DISCUSSION:

Micronutrients include vitamins and minerals required in very small quantities in our bodies. They're critical for a number of important functions, including growth, development and disease prevention. However, the role of nutrients in the development of ovarian cancer remains unclear. Firstly because the literature on the circulating concentrations of minerals and vitamins with risk of ovarian cancer is generally limited, except vitamin D [6,7]. Previous research of the cellular mechanism of vitamin D in ovarian cancer suggested that vitamin D played a critical role in antitumorigenic activities by regulating cellular proliferation and metabolism through genomic and nongenomic signal transduction pathways⁶. However, the role of other micronutrients in ovarian cancer and underlying mechanisms need to be unraveled [8]. Besides, there has been little agreement in the published literature on the role of micro-nutrients in ovarian cancer. For instance, the California Teachers Study prospective cohort study showed that higher intake of β -carotene was associated with a 41% higher risk for ovarian cancer, but another population-based case-control retrospective study suggested that the serum concentration of β -carotene was inversely correlated with the risk of ovarian cancer [9]. Furthermore, given the observational design of most available studies on micro-nutrients and ovarian cancer risk, it is uncertain whether the observed associations are causal and independent of other confounding factors [10].

CONCLUSION:

It is concluded that quality of life is very much important in ovarian tumor therapies. The level of nutrients gets reduced due to tumor that's why it is necessary to maintain the normal values of nutrients.

So that patient may survive with better quality of life.

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