WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 14, Issue 15, 1004-1016. Research Article ISSN 2277–7105

CURRENT TRENDS AND FUTURE DIRECTIONS IN OVARIAN CANCER RESEARCH AND TREATMENT

Mansi Thakur*[1], Bhartendu Sharma*[2], Ravinesh Mishra[2], Sheetal Sharma[3], Jyotsna Bharti[4] and Vasundhara[5]

[1]Research Scholar, School of Pharmacy and Emerging Sciences, Baddi University, Baddi, District-Solan, H.P., India.

[2]Head of Department, School of Pharmacy and Emerging Sciences, Baddi University, Baddi, District-Solan, H.P., India.

[2]Dean, School of Pharmacy and Emerging Sciences, Baddi University, Baddi, District-Solan, H.P., India.

[3]Assistant Professor, School of Pharmacy and Emerging Sciences, Baddi University, Baddi, District-Solan, H.P., India.

Article Received on
09 June 2025,

Revised on 29 June 2025,
Accepted on 19 July 2025

DOI: 10.20959/wjpr202515-37725

***Corresponding Author**
Bhartendu Sharma
Head of Department, School of Pharmacy and Emerging Sciences, Baddi University, Baddi, District-Solan, H.P., India.

ABSTRACT

In 2018, the United States is expected to see 22,240 new diagnoses of ovarian cancer and 14,070 deaths due to the disease. The primary reason of gynecological death from cancer is ovarian cancer. The most dangerous gynecologic cancer is EOC (Epithelial ovarian cancer). Globally, 150,000 women will pass suddenly and 230,000 will receive a diagnosis each year. Main signs of ovarian cancer are Heavy periods, vaginal discharge, fatigue. abdominal nausea, excessive hunger, bloating, or abdominal distension, change in bowel function, urinary symptoms, back pain, exhaustion, and weight loss are some of the non-specific symptoms of EOC that usually appear months before a diagnosis. In advanced EOC, primary debulking surgery (PDS) followed by chemotherapy has been the norm since the 1980s, even though there aren't any upfront randomized trials indicating its true benefits. The various cancer types' treatment approaches vary according to their pathological phases. Promising and successful treatment options will be made possible by early detection.

KEYWORDS: Ovarian Cancer, gynecologic, chemotherapeutic, EOC, fatigue.

INTRODUCTION

In 2018, the United States is expected to see 22,240 new diagnoses of ovarian cancer and 14,070 deaths due to the disease.[1] A multilayered process involving genetic, epigenetic, and other nongenetic factors leads to cancer.[2] The most common cause of gynecological death from cancer is ovarian cancer.[3] It appears frequently at an advanced stage with common peritoneal and/or distant metastases, as per the International Federation of Gynecology and Obstetrics (FIGO) classification., which lowers the survival chances to 20–40% in stage IIIC and 10% in stage IV.[4] The European Society of Gynecological Oncology (ESGO), the International Society of Ultrasound in Obstetrics and Gynecology (ISUOG), the International Ovarian Tumour Analysis (IOTA) group, and the European Society for Gynecological Endoscopy (ESGE) have released an evidence-based consensus statement on the preoperative The identification of ovarian cancer to expedite the referral of patients with ovarian cancer and assist in identifying between benign and malignant ovarian tumors to centralized multidisciplinary care.[5] Although significant medical heterogeneity and ambiguities regarding the origin of tumor tissues have historically delayed the advancement of information regarding ovarian cancer, knowledge has rapidly changedspecifically for the most common type of malignancies, epithelial tumors, in recent years. In addition to providing an overview of the incidence, mortality, and survival rates and trends of ovarian cancer in the United States, this article examines recent research on early detection methods and, when feasible, breaks it down by subtype. The Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI) gather data on cancer incidence in the US population through their Surveillance, Epidemiology, and End Results (SEER) program. The acronym for the National Cancer Registry Program is NPCR. The North American Association of Central Cancer Registries (NAACCR) has been collecting and disseminating incidence data for registries participating in the SEER program and/or the NPCR since 1995. The cross-sectional incidence rates by age, histology, and race/ethnicity, as well as the anticipated number of new cancer cases in 2018, were determined using these data, which almost entirely represent the US population in the most recent time period.[6,7] Histologic subtype has been employed to further categorize incident cases, however death data do not provide this information. The long-term trends in incidence from 1975 to 2014 were obtained using data from the nine oldest SEER databases, which comprise the metropolitan regions of Detroit, Atlanta, San Francisco-Oakland, Seattle-Puget Sound, and

Connecticut.[8] The most deadly kind of cancer in women is ovarian cancer (OC), which comes in third place among all diseases that kill women. Cancer statistics for 2019 showed that there were expected to be 14,170 deaths and 22,240 new cases.[9] Multiple signaling pathways that result in pathogenicity will be activated by these oncogenes. Such coagulation pathway activation by OC is the cause of the higher rate of thrombosis linked to OC.[10,11]

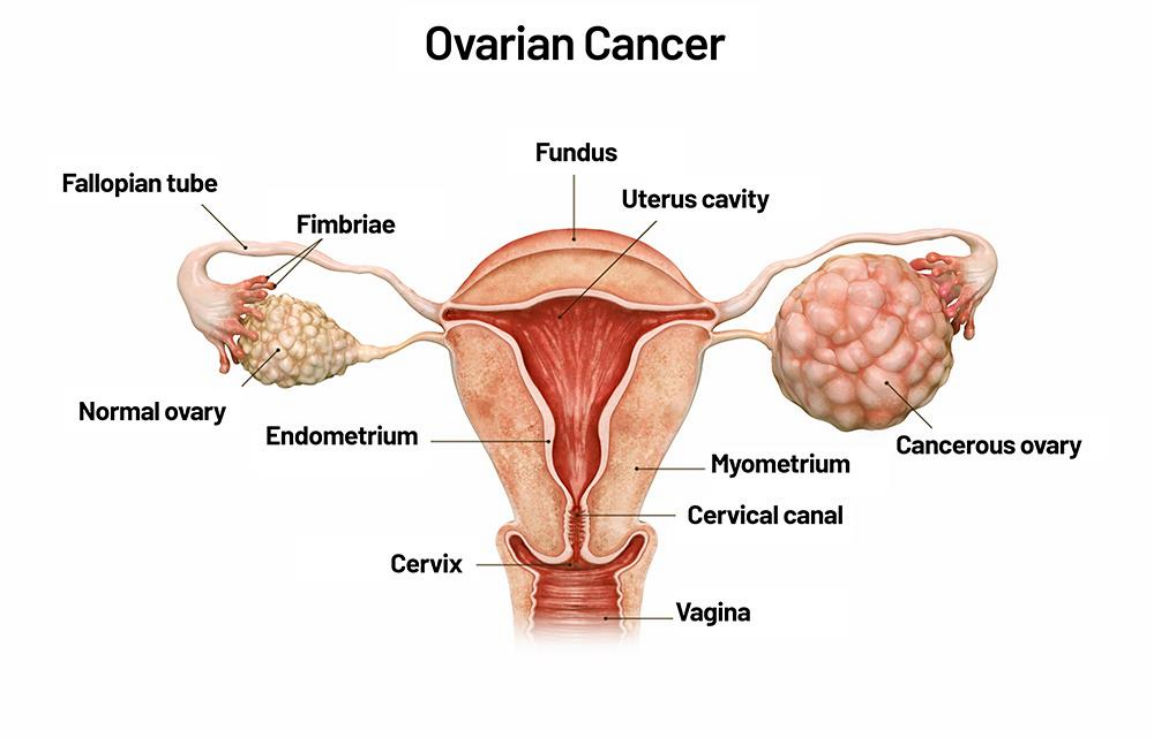


Fig. Ovarian Cancer.[12]

Symptoms

1. Heavy periods
2. Vaginal discharge
3. Fatigue
4. Weight gain
5. Weight loss
6. Indigestion
7. Vaginal bleeding
8. Pelvic pain
9. Abdominal pain
10. Abdominal swelling.[13]

Epidemiology and Risk Factors

The most dangerous gynecologic cancer is EOC (Epithelial ovarian cancer). Globally, 150,000 women will pass suddenly and 230,000 will receive a diagnosis each year.[14] With a 46% survival amount, it ranks as the sixth most common cancer in women globally. Five years following the diagnosis.[15] Unfortunately, over 75% of patients receive a diagnosis because it is asymptomatic, at an advanced stage. It is estimated that up to 15% of affected women are genetically predisposed to EOC. Genes that make breast cancer more likely between 65 and 75 percent of hereditary EOC has been linked to the genes BRCA1 and BRCA2.

High grade serous EOC subtype vulnerability is mostly linked to harmful mutations in BRCA1/2 and other double-strand DNA break repair genes. Ten to fifteen percent of hereditary EOC is caused by Lynch syndrome, an autosomal dominant hereditary cancer family syndrome.[16,17] Rare diseases and Peutz-Jegher are more genetic syndromes.[18] A family history of EOC, smoking, benign gynecologic disorders like endometriosis, polycystic ovarian syndrome, and pelvic inflammatory disease, as well as the number of lifetime ovulations (lack of pregnancy, early menarche, and late menopause age) are risk factors for EOC, illness and possibly talc.[19,20]

Screening

Since there is currently no recognized approach, In order to diagnose EOC early, considerable efforts have been made to implement screening of the general population.[21] Using the risk-for-ovarian-cancer In UKCTOCS, a randomized controlled research including over 200,000 women comparing annual transvaginal ultrasound screening to annual multimodal screening with serum cancer antigen (CA125) vs no screening, the algorithm did not significantly lower mortality. Comparing women who have undergone multimodal screening for invasive peritoneal, tubal, or ovarian cancer to those without screening, additional follow-up is being conducted to evaluate the late benefit resulting from a notable stage change.[22] CA125 has been employed to evaluate other biomarker combinations, such as Human Epididymis Protein 4 (HE4), a glycoprotein released by the female reproductive tract's Mullerian epithelial; however more research is necessary. A Using the study evaluated 4348 women with a ≥10% lifetime risk of ovarian cancer using transvaginal sonography and the risk of ovarian cancer algorithm (ROCA) or fallopian tube cancer. The results showed evidence of stage shift, with 53% of cancers found during the trial being early stage

compared to only 6% of cancers found more than a year after the trial screening concluded.[23,24] The effect of this approach on survival will be ascertained through longer follow-up. For unaffected people with a high familial risk of ovarian cancer, the current suggestion is still to have a risk-reducing salpingo-oophorectomy by a certain age hereditary susceptibility. Additionally, efforts are being made to enhance the genomic screening approach.[25] With the high incidence of epithelial ovarian cancer, early detection techniques should have very high specificity (99.6%) and high sensitivity (>75%) in order to achieve a 10% or higher positive predictive value. The sensitivity and specificity of serum CA125 levels are insufficient for use as a screening tool on their own. Greater specificity can be attained by tracking the concentration of CA125 over time, through combining CA125 testing with transvaginal ultrasonography (TVS), or by both. Researchers enrolled 202 638 postmenopausal women participants in the UK Collaborative Trial of Ovarian Cancer Screening ranged in age from 50 to 74. They stated that both concentrations were sensitive, and although TVS is commonly taken into account, its efficacy in a high-risk situation has not yet been proven.[26]

Diagnosis

Abdominal abdominal distension, nausea, bloating, and early satiety, change in bowel function, urinary symptoms, back pain, exhaustion, and weight loss are some of the non-specific symptoms of EOC that usually appear months before a diagnosis.[27] The detection of CA125 concentrations and pelvic ultrasonography are examples of preliminary investigations. For staging purposes, additional imaging should include of chest and abdomen/pelvis CT scans. A pelvic MRI may also be necessary to accurately assess EOC extension. The ideal staging is surgical procedures that include para-aortic and pelvic lymph node dissection, bilateral salpingo-oophorectomy, omentectomy, peritoneal surface examination with biopsy or excision of any questionable areas, and total abdominal hysterectomy. A skilled gynecological oncology surgeon should undertake surgery with the aim of leaving no illness behind. The staging process will determine the surgical stage, typically using the AJCC-TNM classifications or the International Federation of Gynecology and Obstetrics staging of ovarian cancer (FIGO stage).[28,29] Since ovarian cancer has several histological subtypes and treatment modalities, pathologic identification of tumor tissue is crucial. It has become evident during the past ten years that EOC encompasses a variety of disorders with unique precursor lesions, tissues of origin and molecular biology, patient outcome, chemosensitivity, and clinical presentation.

Surgery

In advanced EOC, primary debulking surgery (PDS) followed by chemotherapy has been the norm since the 1980s, even though there aren't any upfront randomized trials indicating its true benefits.[30] For one to diagnose, stage, and treat EOC, surgery is required. Even though Ovarian cancer can spread via the hematogenous or lymphatic systems, with the majority of the tumor located on the peritoneal surfaces. Ovarian tumor cells shed into the peritoneal cavity, travel throughout the abdomen and pelvis, and eventually implant onto peritoneal surfaces to cause this peritoneal illness. The formation of enough neovasculature to support both tumor growth and cell survival is also necessary for the viability of these cells and successful tumor growth. Attempts at surgical cytoreduction prior to the administration of treatment have been prompted by this unique distribution pattern within the relatively accessible chemotherapeutic peritoneal cavity. Nearly every study done in the last 30 years on ovarian cancer patients has found an inverse connection between overall survival (OS) and the volume of tumor left after intial surgery.[31] When neoadjuvant chemotherapy (NACT) was administered in conjunction with interval debulking surgery (IDS), two clinical trials that were randomized and compared PDS and chemotherapy revealed comparable survival rates with minimal operational morbidity.[32,33] Despite the fact that almost all of these statistics are retrospective, the regularity of the finding of better results with procedure. The objective of "optimal" tumor cytoreduction to no macroscopic visible disease with initial diagnostic Debulking has made surgery possible. The diameter of the largest remaining tumor nodule following debulking surgery is referred to as "optimal" or "suboptimal"; it is 1 cm or less for optimal debulking and more than 1 cm for suboptimal debulking. Nonetheless, the aim of debulking surgery is to leave the patient visibly debulked and free of any signs of illness. Those who have a gynecologic oncology surgeon execute their first diagnostic procedure are more likely to be in the best possible cytoreduced. Given the effect of initial surgery on clinical prognosis, individuals who have only undergone biopsy, paracentesis, or incomplete debulking should be referred to a specialist gynecologic oncologist for consideration of reoperation. It should be acknowledged that attempting maximum surgical cytoreduction in the presence of extensive disease outside of the organ of origin is peculiar to patients with solid tumors. Hence, ovarian cancer first surgery aims to detect and stage the disease as well as offer therapeutic advantages through cytoreduction. Accurate staging and a precise histologic diagnosis are necessary prior to systemic treatment, as the surgical stage of the disease will dictate the prognosis and subsequent treatment.[34] This grading system includes seven parameters: mesenteric dysfunction, diaphragmatic disease, peritoneal carcinomatosis,

and illness, liver metastases, intestinal infiltration, stomach infiltration, and omental disease. While stomach infiltration had the lowest negative predictive value (71.6%) and accuracy (77.3%), mesenteric retraction was the most challenging to evaluate by laparoscopy (75.2%). The Fagotti score should be used consistently across all centers, according to a review on predictors of optimal cytoreduction among individuals with recently discovered advanced stage EOC. A predictive index value of 8 or higher has been demonstrated to have the best prediction of suboptimal cytoreduction.[35]

Ovarian Carcinoma Pathobiology

The nature of ovarian cancer varies. As the condition worsens, multiple molecular level alterations occur. Generally, the tumor is located in three different parts of the ovary. is created. The majority of malignancy develops from the surface epithelium. It is seen in many histologic types. The most prevalent kind, serous ovarian cancer (SOC), typically manifests in advanced age. Endometrioid carcinoma is linked to endometriosis and manifests at an early age. Clear cell carcinoma and mucinous carcinoma can also appear early in life. The stroma and germ cells are the additional regions where the OC develops. These cancers are complicated because of the microenvironment that is impacted by variations in genetic variables. Based on the adjustments, the level intricacy varies in epigenetic elements as well. The diagnosis, available treatments, and survival of a tumor all depend on an understanding of its microenvironment. various ovarian cancer types have various microenvironments, and variations in gene expression result in distinct tumor indicators. The development of targeted drugs depends heavily on the tumor markers.[36] Histologic types generated during the embryonic stage have been found to exhibit abnormal expression of homeobox (HOX). HOXA9 is not present in healthy ovarian cells. HOXA9 is highly expressed in SOC throughout the development of the fallopian tube in the embryo. Endometroid carcinoma and mucinous carcinoma are associated with abnormal levels of HOXA10 and HOXA11, respectively.[37]

Ovarian Cancer Treatment Strategies

The various cancer types' treatment approaches vary according to their pathological phases. Promising and successful treatment options will be made possible by early detection. Present Combining debulking surgery, medication, and radiation therapy are available therapeutic options. Hormone therapy, immunotherapy, and targeted therapy are a few of the more sophisticated therapeutic options. The most important aspect of treating OC is chemotherapy.

Chemotherapeutic drugs can be given intraperitoneally (IP), intravenously (IV), or by mix of IV and IP. Prior to surgery, chemotherapy was performed as part of the neo adjuvant treatment plan. The recommended method for delivering chemotherapeutic drugs is IP/IV combination. medication administration for cytoreduced illness patients with OC.[38,39]

Drug	Type of Drug	Targets/Mode of Action	Type of Cells
Cisplatin/Carboplatin	Platinum-based chemotherapeutic Compound	DNA (alkylating DNA/cross-linking DNA, induction of mispairing of nucleotides)	Cancer cells
Paclitaxel (taxanes)	Mitotic inhibitor	Beta subunit of tubulin (prevents its polymerization into microtubules)	Cancer cells
Cyclophosphamide	Alkylating agent	Guanine residues	Cancer cells
Topotecan		Topoisomerase I (it inhibits its action)	Cancer cells
Doxorubicin	Antibiotic	DNA, Topoisomerase II	Cancer cells
Bevacizumab	Monoclonal antibody	VEGF-A	Cancer cells
Olaparib	PARP inhibitors	PARP	Cancer cells
Avelumab	Immune checkpoint inhibitor (antibody)	PD-L1	Cancer cells/endothelial cells, myeloid-derived suppressor cells, M1 macrophages
Pembrolizumab	Immune checkpoint inhibitor (antibody	PD-1	T lymphocytes, Tregs, NK cells, Th2

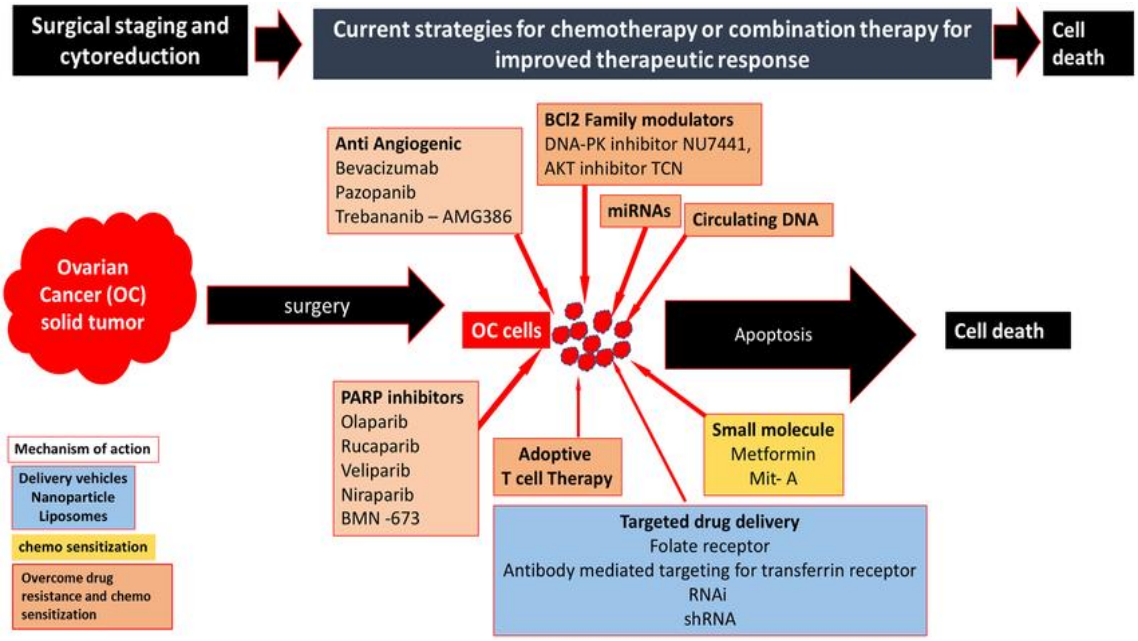
Molecular targets of drugs applied in Ovarian Cancer Treatment[40]

Future Prespectives

Even with the significant advancements in OC treatment, it remains the most deadly cancer in women. The largest obstacle is the lack of effective screening methods that aid in early detection of the tumor. About 20% of OC cases are identified as early as stage 1, despite the 90% cure rate for individuals in the early phases of the illness. This suggests that further research is needed to find more responsive and specific biomarkers for early OC detection. The typical course of therapy for ovarian cancer is surgery and chemotherapy. The main obstacle to treatment for a recurrent progressing malignancy is a poor prognosis. The outlook differs for every patient and depends on how successfully they respond to first treatment. The most effective method of targeting OC cells located in the peritoneal region is drug administration via IP. The best treatment for OC is surgery to remove all remaining tissues, followed by chemotherapy. One important factor in the effectiveness of treatment is

susceptibility to chemotherapy medications. One of the main goals of cancer research should be to identify biomarkers for apoptosis and chemo resistance in OC therapy (e.g., Caris® Assays).

One of the newly identified microRNA biomarkers linked to platinum drug resistance is Let-7.[41]



Current strategies for improving therapeutic response.[42]

CONCLUSION

Ovarian cancer affects a lot of women in our community. In the previous several decades, despite persistent efforts and consistent advancements in therapy, OC continues to be the most deadly type of cancer in women. Chemotherapy resistance, increased disease heterogeneity, and a lack of useful techniques for early illness detection are the causes of the poor clinical result. A quarter of patients have either acquired or inherited BRCA mutations, and the great High-grade papillary serous histology with p53 mutations is present in the majority of cases. Chemotherapy and cytoreductive surgery are used to start primary therapy. Despite therapy optimization treatments that have only modestly increased OS but improved PFS. In the end, almost 80% of patients experience PROC. Following this, more chemotherapeutic response Survival averages 9–12 months, and rates range from 10% to 15%. Therefore, in order to boost recovery rates and offer long-term illness stability that works for PROC, we urgently need to discover novel therapeutics.

REFERENCES

1. Siegel, R. L., Miller, K. D., & Jemal, A. (2018). Descriptive Epidemiology. The American Cancer Society's Principles of Oncology: Prevention to Survivorship, 1-14.
2. Hanahan, D. (2022). Hallmarks of cancer: new dimensions. Cancer discovery, 12(1): 31-46.
3. Hernández-Morales, A., González-López, B. S., Scougall-Vilchis, R. J., Bermeo-Escalona, J. R., Velázquez-Enríquez, U., Islas-Zarazúa, R., ... & Maupomé, G. (2023, April). Lip and oral cavity cancer incidence and mortality rates associated with smoking and chewing tobacco use and the human development index in 172 countries worldwide: an ecological study 2019–2020. In Healthcare (Vol. 11, No. 8, p. 1063). MDPI.
4. Ferlay, J., Steliarova-Foucher, E., Lortet-Tieulent, J., Rosso, S., Coebergh, J. W. W., Comber, H., ... & Bray, F. (2013). Cancer incidence and mortality patterns in Europe: estimates for 40 countries in 2012. European journal of cancer, 49(6): 1374-1403.
5. Timmerman, D., Planchamp, F., Bourne, T., Landolfo, C., du Bois, A., Chiva, L., ... & Fotopoulou, C. (2021). ESGO/ISUOG/IOTA/ESGE Consensus Statement on pre-operative diagnosis of ovarian tumors. International Journal of Gynecological Cancer, 31(7): 961-982.
6. National Cancer Institute. (2007). Surveillance, Epidemiology, and End Results (SEER) Program: SEER Stat Database.
7. America, N. Cancer in North America: 2008-2012 Volume One: Combined Cancer Incidence.
8. National Cancer Institute. (2018). Surveillance, epidemiology, and end results (SEER) program. Cancer Statistics, SEER Data & Software, Registry Operations.
9. DeSantis, C. E., Miller, K. D., Dale, W., Mohile, S. G., Cohen, H. J., Leach, C. R., ... & Siegel, R. L. (2019). Cancer statistics for adults aged 85 years and older, 2019. CA: a cancer journal for clinicians, 69(6): 452-467.
10. Wang, X., Wang, E., Kavanagh, J. J., & Freedman, R. S. (2005). Ovarian cancer, the coagulation pathway, and inflammation. Journal of translational medicine, 3: 1-20.
11. Holmes, C. E., Levis, J. E., & Ornstein, D. L. (2009). Activated platelets enhance ovarian cancer cell invasion in a cellular model of metastasis. Clinical & experimental metastasis, 26: 653-661.
12. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.saintjohnscancer.org%2Fgynecology%2Fconditions-we-treat%2Fovarian cancer%2F&psig=AOvVaw2C7l4NG86jWxda7Sc3fkvE&ust=1733291745570000&sour

ce=images&cd=vfe&opi=89978449&ved=0CBEQjRxqFwoTCJCn_In1iooDFQAAAAAdAAAAABAJ.

13. Hamilton, W., Peters, T. J., Bankhead, C., & Sharp, D. (2009). Risk of ovarian cancer in women with symptoms in primary care: population based case-control study. Bmj, 339.W
14. Ferlay, J., Soerjomataram, I., Dikshit, R., Eser, S., Mathers, C., Rebelo, M., ... & Bray, F. (2015). Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. International journal of cancer, 136(5): E359-E386.
15. Doherty, J. A., Peres, L. C., Wang, C., Way, G. P., Greene, C. S., & Schildkraut, J. M. (2017). Challenges and opportunities in studying the epidemiology of ovarian cancer subtypes. Current epidemiology reports, 4: 211-220.
16. Bewtra, C., Watson, P., Conway, T., Read-Hippee, C., & Lynch, H. T. (1992). Hereditary ovarian cancer: a clinicopathological study. International journal of gynecological pathology, 11(3): 180-187.
17. Vasen, H. F., Watson, P., Mecklin, J. P., & Lynch, H. T. (1999). New clinical criteria for hereditary nonpolyposis colorectal cancer (HNPCC, Lynch syndrome) proposed by the International Collaborative group on HNPCC. Gastroenterology, 116(6): 1453-1456.
18. Folkins, A. K., & Longacre, T. A. (2013). Hereditary gynaecological malignancies: advances in screening and treatment. Histopathology, 62(1): 2-30.
19. Reid, B. M., Permuth, J. B., & Sellers, T. A. (2017). Epidemiology of ovarian cancer: a review. Cancer biology & medicine, 14(1): 9-32.
20. Penninkilampi, R., & Eslick, G. D. (2018). Perineal talc use and ovarian cancer: a systematic review and meta-analysis. Epidemiology, 29(1): 41-49.
21. Menon, U., Karpinskyj, C., & Gentry-Maharaj, A. (2018). Ovarian cancer prevention and screening. Obstetrics & Gynecology, 131(5): 909-927.
22. Jacobs, I. J., Menon, U., Ryan, A., Gentry-Maharaj, A., Burnell, M., Kalsi, J. K., ... & Skates, S. J. (2016). Ovarian cancer screening and mortality in the UK Collaborative Trial of Ovarian Cancer Screening (UKCTOCS): a randomised controlled trial. The Lancet, 387(10022): 945-956.
23. Moore, R. G., McMeekin, D. S., Brown, A. K., DiSilvestro, P., Miller, M. C., Allard, W. J., ... & Skates, S. J. (2009). A novel multiple marker bioassay utilizing HE4 and CA125 for the prediction of ovarian cancer in patients with a pelvic mass. Gynecologic oncology, 112(1): 40-46.
24. Rosenthal, A. N., Fraser, L. S., Philpott, S., Manchanda, R., Burnell, M., Badman, P., ... & United Kingdom Familial Ovarian Cancer Screening Study collaborators. (2017).

Evidence of stage shift in women diagnosed with ovarian cancer during phase II of the United Kingdom familial ovarian cancer screening study. Journal of Clinical Oncology, 35(13): 1411-1420.

25. Skates, S. J., Greene, M. H., Buys, S. S., Mai, P. L., Brown, P., Piedmonte, M., ... & Lu, K. H. (2017). Early detection of ovarian cancer using the risk of ovarian cancer algorithm with frequent CA125 testing in women at increased familial risk–combined results from two screening trials. Clinical Cancer Research, 23(14): 3628-3637.
26. Cannistra, S. A. (2004). Cancer of the ovary. New England Journal of Medicine, 351(24): 2519-2529.
27. Goff, B. A., Mandel, L. S., Melancon, C. H., & Muntz, H. G. (2004). Frequency of symptoms of ovarian cancer in women presenting to primary care clinics. Jama, 291(22): 2705-2712.
28. Matos, L. L., Dedivitis, R. A., Kulcsar, M. A. V., de Mello, E. S., Alves, V. A. F., & Cernea, C. R. (2017). External validation of the AJCC Cancer Staging Manual, in an independent cohort of oral cancer patients. Oral oncology, 71: 47-53.
29. Lio, S. (2016). Assigning site of origin in non-uterine high-grade serous cancers: Bridging the gap between research and clinical practice. McGill University (Canada).
30. Griffiths, C. T., & Fuller, A. F. (1978). Intensive surgical and chemotherapeutic management of advanced ovarian cancer. The Surgical Clinics of North America, 58(1): 131-142.
31. Bristow, R. E., Tomacruz, R. S., Armstrong, D. K., Trimble, E. L., & Montz, F. J. (2002). Survival effect of maximal cytoreductive surgery for advanced ovarian carcinoma during the platinum era: a meta-analysis. Journal of clinical oncology, 20(5): 1248-1259.
32. Kehoe, S., Hook, J., Nankivell, M., Jayson, G. C., Kitchener, H., Lopes, T., ... & Swart, A. M. (2015). Primary chemotherapy versus primary surgery for newly diagnosed advanced ovarian cancer (CHORUS): an open-label, randomised, controlled, non-inferiority trial. The Lancet, 386(9990): 249-257.
33. Vergote, I., Tropé, C. G., Amant, F., Kristensen, G. B., Ehlen, T., Johnson, N., ... & Reed, N. S. (2010). Neoadjuvant chemotherapy or primary surgery in stage IIIC or IV ovarian cancer. New England Journal of Medicine, 363(10): 943-953.
34. Jl, B. (2000). FIGO staging classifications and clinical practice guidelines in the management of gynecologic cancers. Int J Gynecol Obstet, 70: 209-262.
35. Gómez-Hidalgo, N. R., Martinez-Cannon, B. A., Nick, A. M., Lu, K. H., Sood, A. K., Coleman, R. L., & Ramirez, P. T. (2015). Predictors of optimal cytoreduction in patients

with newly diagnosed advanced-stage epithelial ovarian cancer: time to incorporate laparoscopic assessment into the standard of care. Gynecologic oncology, 137(3): 553-558.

36. Bast Jr, R. C., Hennessy, B., & Mills, G. B. (2009). The biology of ovarian cancer: new opportunities for translation. Nature Reviews Cancer, 9(6): 415-428.
37. Cheng, W., Liu, J., Yoshida, H., Rosen, D., & Naora, H. (2005). Lineage infidelity of epithelial ovarian cancers is controlled by HOX genes that specify regional identity in the reproductive tract. Nature medicine, 11(5): 531-537.
38. Tewari, D., Java, J. J., Salani, R., Armstrong, D. K., Markman, M., Herzog, T., ... & Chan, J. K. (2015). Long-term survival advantage and prognostic factors associated with intraperitoneal chemotherapy treatment in advanced ovarian cancer: a gynecologic oncology group study. Journal of Clinical Oncology, 33(13): 1460-1466.
39. Wright, A. A., Cronin, A., Milne, D. E., Bookman, M. A., Burger, R. A., Cohn, D. E., ... & O'Malley, D. M. (2015). Use and effectiveness of intraperitoneal chemotherapy for treatment of ovarian cancer. Journal of Clinical Oncology, 33(26): 2841-2847.
40. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FMolecular-targets-of-drugs-applied-in-ovarian-cancer-treatment_tbl1_347249594&psig=AOvVaw0pVD5_FrLrf7GfaB_Sg3D9&ust=1735739022320000&source=images&cd=vfe&opi=89978449&ved=0CBQQjRxqFwoTCODm__GR0ooDFQAAAAAdAAAAABAE.
41. Chekmasova, A. A., Rao, T. D., Nikhamin, Y., Park, K. J., Levine, D. A., Spriggs, D. R., & Brentjens, R. J. (2010). Successful eradication of established peritoneal ovarian tumors in SCID-Beige mice following adoptive transfer of T cells genetically targeted to the MUC16 antigen. Clinical cancer research, 16(14): 3594-3606.
42. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FCurrent-strategies-for-improving-therapeutic-response-Effective-Targeted-therapyUsage_fig4_336112948&psig=AOvVaw2YqoFcspl_0GsZ_YEqP3AI&ust=1735740974611000&source=images&cd=vfe&opi=89978449&ved=0CBQQjRxqFwoTCLiC25WZ0ooDFQAAAAAdAAAAABAE.