ARTIFICIAL INTELLIGENCE: INTRODUCING TO THE FIELD OF INFERTILITY ON PATIENT HAVING OVARIAN CANCER

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ABSTRACT: Artificial intelligence (AI) is a human-invented technology that is supposed to perform specific tasks more quickly and with fewer resources. Machine data base or machine calculation is much accurate, which shows a positive point towards patient safety.AI is a discipline of computer science that focuses on developing intelligent machines that can accomplish tasks that would normally need human intelligence. Ovarian cancer is such a widespread disease that it is observed all over the world. It may cause infertility since it has a direct effect on the reproductive organs.AI will play a critical role in future IVF facilities, boosting outcomes and reducing pregnancy complications. This review article looks at how artificial intelligence (AI) can help infertile ovarian cancer patients. In the field of infertility, Artificial intelligence (AI) is a well-developed platform. Patients with ovarian cancer may experience infertility.If a patient is able to conceive following ovarian cancer, there is a higher risk of disease transmission from parent to offspring through gene.Through gene mapping, AI can read the gene coding and alert to the impact of diseases, reducing the danger of disease transmission. It may also reduce the pregnancy complication.

KEYWORDS: Artificial intelligence (AI), ovarian cancer, Infertility and Pregnancy

1.INTRODUCTION:

Artificial intelligence (AI) is a discipline of computer science that focuses on developing intelligent machines that can accomplish tasks that would normally need human intelligence. It is basically a machine work which functions according to human mind and modification.AI is a machine work that is generated by a human being. It is a commonly

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used platform in numerous areas that reduces human effort.AI is a human-invented technology that is supposed to perform specific tasks more quickly and with less effort.[1]

How Artificial Intelligence (AI) good in medical field?

AI is a human-invented technology that is supposed to perform specific tasks more quickly and with fewer resources. Machine data base or machine calculation is much accurate, which shows a positive point towards patient safety. A view from medical perspective it is really important to take care of patient health. It minimizes the human error. Perform well as program fix in it. Fingerprint recognition and biometrics are some examples of AI in forensic sciences. The link between artificial intelligence and medicine is quite strong.[2,3]

Ovarian cancer

Ovarian cancer is a cancerous development of cells in the ovaries. The cells reproduce rapidly and have the ability to infiltrate and kill healthy body tissue. As per the studies it shows cancer cannot predict or tested positive on time, which may lead to growth of cancerous cell rapidly. As it is an ovarian cancer it is in a reproductive organ. The main cause of ovarian cancer is by gene. BRCA1 and BRCA2 are two genes linked to an increased risk of ovarian cancer.[4] The basic symptoms seen during ovarian cancer is:
Swelling, constipation, pain in urination, higher flow of urine, etc show in fig.

Fig. Diagrammatic representation of ovarian cancer[5]

This is the diagrammatic representation of cancerous and normal ovary. It demonstrates how damaging it is to the ovary. If your ovarian cancer is detected early on or if you have a germ cell tumor form of ovarian cancer it can be cure. As seen majority of ovarian cancer treatment involve chemotherapy, which adversely affects the normal body functioning. Treatment for ovarian cancer may include the removal of the ovaries and fallopian tubes, as well as the uterus, which means you won't be able to conceive naturally and leads towards infertility.[6]

Ovarian cancer and Infertility

As per the studies it shows that ovarian cancer, as per the name directly effects the ovaries next to fallopian tube. Ovaries are the primary reproductive organ. Ovary produces female reproductive hormone estrogen, and progesterone which is important for fertility factor. Each menstrual cycle, the ovary releases one egg.[7] This process is known as ovulation. When the ovaries quit working, it has a direct impact on fertility.Cancer therapies may harm or eliminate reproductive organs such as the ovaries or uterus, which is important in fertility and pregnancy. Chemotherapy is the most well-known, and it is used to treat all types of cancer.Some chemotherapy medications can cause your ovaries to producing estrogen and eggs. Primary ovarian insufficiency is the term used to describe this condition (POI). It could be a one-time thing or something that lasts a lifetime. Chemotherapy effects

adversely, may always leads to the another problem. Most of the time we see the hair loss, mouth sores and fatigue. This is all about ovarian cancer and how it effects on normal body function and on fertility, move towards how it can be cure.[8]

Role of ART (Assisted Reproductive Technology)
Assisted reproductive technology are the key parameter for those couple who wants their biological child.It is the safest and most secure method of conception. ART involve various methods such as, IUI (Intrauterine sperm injection)/ IVF (Invitro fertilization) / ICSI (Intracytoplasmic sperm insemination) which technique should be used is basically on patient history. When it comes to ovarian cancer, most of the time if a flaw is discovered in one side of the ovary, it is removed from the body to prevent the disease from spreading further.In such situations, the only possibility is a solitary, remaining ovary, from which we found an egg. If the male partner does not have any fertility issues, then fertility treatment is considered.Move on to IUI, or intrauterine insemination, which is for patients who are having problems with sperm but not eggs.However, if ovarian cancer is present in the patient, IVF/ICSI is recommended.Thisis safest technique to conceive for the patient having ovarian cancer.[9,10]

2.DISCUSSION

Assisting an infertile ovarian cancer patient through Artificial intelligence
Artificial intelligence (AI) is the well-developed technique used in the field of ART or any other also. AI is used to identify high-quality eggs, oocytes, and embryos, which reduces the probability of cycle failure.Because computerized evaluation of eggs and embryos is considerably superior than a natural view, the widespread use of AI in ART may raise the rate of success. According to research, ovarian cancer patients who are still trying to have a child have a higher risk of passing on such disorders to their children, via genome research AI can be aware of this in order to prevent the disease from spreading. BRCA1 and BRCA2 are two genes linked to an increased risk of ovarian cancer.It can recognize cancer cells, classify their type, and predict the presence of somatic mutations in the tumor.[11] AI algorithms can improve the use of prior knowledge by informing phenotype-to-genotype mapping. Here, AI describe both genome annotation and variant classification because many of the AI algorithms that are used to predict the presence of a functional element from primary DNA sequence data are also used to predict the impact of a genetic variation on those functional elements.[12] Many of the techniques described above have been adapted to address the various steps involved in clinical genomic analysis, such as variant calling, genome annotation, and phenotype-to-genotype correspondence, and they may one day be applied to genotype-to-phenotype predictions as well. By informing phenotype-to-genotype mapping, AI systems can minimize the human efforts and give accurate results which also minimize the further complication.[13,14] The key groups of challenges addressed by AI in clinical genomics are described here.AI identify the proper embryo more rapidly so that women undergoing IVF can conceive sooner and thereby reduce IVF stress. As a result, it can forecast DNA sequences, which is crucial for reducing disease transmission rates.[15] This is how AI can play a role in such a viewpoint. Because safety is paramount in the medical industry, proper sperm, egg, and ovum examination is critical. AI helps in the selection of high-quality sperm, reducing the likelihood of pregnancy complications.[16] Optimizing embryo selection, as we have stated, may lower the likelihood of multiple pregnancies and the risk associated with them. It was also used to assess the quality of sperm.[17,18]

3.CONCLUSION:

Artificial intelligence (AI) is the well-developed technique used in various sectors. It works quickly, which is difficult for a human to do at first. It also reduces human mistake because it is completely computerized and give accurate results.The artificial intelligence (AI) approach is designed specifically for diagnosis and therapy. In Assisted reproductive technologies (ART), it is clear that AI is not yet fully developed. Human preference is always first, because it is very serious and emotional work, giving a life is not easy. Patient is having higher expectation with the entire team. As per diagnosis point of view Artificial intelligence (AI) are reveals to be the best which minimize the human error and giving the accurate result.

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