

Oncofertility Saturday Academy Poster Abstract Form

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Abstract Categories

Check one only:

- Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: The Correlation Between DAZ Gene Deletions and Male Infertility

AUTHOR: Justice Bufford

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: How do deletions of the DAZ gene on the Y chromosome cause male infertility?

The participant will be able to demonstrate: Participants will have an understanding of the correlation between the DAZ gene on the Y chromosome and male infertility. Participants will also have an introduction of DAZ deletions and their association with Y chromosome sub deletions (such as gr/gr) in correlation with male infertility.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

The topics that will be presented are the DAZ gene and its significance on spermatogenesis; DAZ deletions and how its absence causes male infertility; a brief look at DAZ deletions and their association with Y chromosome sub deletions in correlation with male infertility; and the genetics of male infertility.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

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Male infertility is a severe health problem that affects around 7% of men. Out of this cohort, about 25% have idiopathic infertility. It's likely that the majority of these men have underlying genetic abnormalities that cause this. From recent studies, deletions on the long arm of the Y chromosome (Yq) are said to cause severe cases of azoospermia and oligospermia. The focus of this research is to observe how genetic deletions of the DAZ (Deleted in AZoospermia) gene on the Y-chromosome cause male infertility. A study was orchestrated to observe the causes of spermatogenic damage from a genetic standpoint. The study was carried out by using a microarray evaluation in 16 patients that carried the AZF (AZoospermia Factor)c microdeletion and men that had idiopathic infertility. Ordered clustering was performed by merging the data set from 26 experiments (16 patients, 10 technical replicates). The analysis of the DAZ gene was not shown in all four patients who did not have the AZFc deletion. These results were confirmed by a RT-PCR evaluation. From the acquired data, we can hypothesize that DAZ deletions could represent the cause for reduced storage of essential testis transcripts encoded in the first steps of spermatogenesis. We can see that from previous data the DAZ gene codes for specific RNA-binding proteins that are essential for gametogenesis. In conclusion, we can safely say that the absence of the DAZ gene greatly affects the first few stages of spermatogenesis and causes infertility. Genetic testing for DAZ gene deletions and other sub-deletions of the AZFc region should be applied when testing couples for male factor infertility.

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Abstract Categories

Check one only:

Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: Regeneration of Oocytes after Chemotherapy Using Bone Marrow Transplant Therapy in a Rodent Model

AUTHOR: Allyson Choi

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: Can bone marrow transplants aid in the regeneration of oocytes after chemotherapy treatment?

The participant will be able to demonstrate: This poster will demonstrate how bone marrow transplants can be viable solutions for preserving or resurrecting fertility and ovarian function after chemotherapy treatment.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

The effects of bone marrow transplants on long-term fertility and oocyte regeneration will be examined. Also, different speculations concerning the outcome of the experiment will be presented and reviewed.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

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In patients with certain cancers or diseases such as leukemia, lymphoma, and sickle cell anemia, a bone marrow transplant (BMT) is a life-saving treatment, allowing doctors to utilize aggressive methods of cancer treatment. The effects of these treatments can result in the loss of reproductive function and the pathologic destruction of oocytes. In the past, the destruction of oocytes has been viewed as irreversible, but recent research concerning BMT's has challenged the long-standing dogma that the ovarian reserve is fixed and cannot be replenished after birth. There are indications that BMT's can cause oocyte regeneration after cancer treatment, with several examples supporting this idea in rodent models. In a recent study, the impact of BMT was tested on female reproductive function. This was done by administering chemotherapy to female mice followed by BMT using coat color-mismatched female donors. After mating, the number of pregnancies and offspring genotype were recorded and each offspring was assigned maternal heritage based on coat color. For cell tracking, bone marrow from germline-specific green fluorescent protein-transgenic mice was transplanted into chemotherapy-treated wild-type recipients. The tests showed that all offspring generated in the experiment were of recipient origin, despite the fact that cell tracking confirmed donor-derived oocytes in the ovaries of the recipient mice. These oocytes of donor origin were only observed in immature follicles up to the preantral stage of development, but never observed in Graafian follicles from which ovulated eggs are derived. This indicates that BM-derived germ cells do not mature for ovulation or fertilization. From this experiment, data suggests that BMT acts primarily by reactivating host oogenesis, which becomes impaired from chemotherapy through either the direct effects of the drugs on cells responsible for oogenesis, or the indirect effect of the drugs on the niches that support those cells. It is also possible that the ovaries become so damaged that differentiation of germ cells fails to occur and will not resume until the niche is repaired by the transplanted somatic cells or by factors released from the transplanted cells.

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Abstract Categories

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ABSTRACT TITLE: **The Effects of Chemotherapy Compared with Radiation Treatments on Ovarian Follicles**

AUTHOR: **Kayla Epperson**

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: **Would chemotherapy treatments or radiation treatments effect ovarian follicles more?**

The participant will be able to demonstrate: Through research, medical journals and clinical studies that alkylating agents can damage immature follicles in the ovarian reserve. Some alkylating would be Cyclophosphamide and Mustargen. Show how radiation could also damage the ovarian follicles and comparing the two. By demonstrating which one would damage ovarian follicles more than the other.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

Mature and immature follicles are damaged by chemotherapy. The methods on how to preserve these follicles. Chemotherapy treatments that damage the follicles more than other treatments like, Alkylating drugs, Antimetabolites, Antitumor antibiotics, Plant alkaloids, Steroid hormones, and Topoisomerase inhibitors. The different ways to receive chemotherapy. Methods to how you can preserve your follicles. Differences between the effects chemotherapy and radiation treatments on ovarian follicles.

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The poster will be consisting of different view points on how different types of chemotherapy can damage follicles in the ovarian reserve. Then the poster will go into the types of treatments and how a patient can receive chemotherapy. The poster will also go into the differences between chemotherapy and radiation treatments. The focus of the research is determining whether chemotherapy or radiation treatments are damaging the ovarian follicles more. There are different chemotherapy treatments that can damage ovarian follicles. If your doctor is giving you a high dose of chemotherapy, the type of treatment and the combinations of the chemotherapy treatments. A scientist can also affect the ovarian follicles by radiation treatments. These radiation treatments would be Adjuvant Radiation Therapy and Palliative Radiation Therapy. Also using newer technology will help find how chemotherapy and radiation therapy causes damage to the ovarian follicles such as, better viewing technology to view how big and small the cancer cells are getting, and better methods to viewing how many follicles you have without evasive operating procedures. The data collected states that there is still more testing to be done to find out how not to damage the ovarian follicles with chemotherapy and radiation therapy, but also killing cancer cells effectively. There are also more discoveries to be found in technology. Even though we haven't made these discoveries, we have found better ways to preserve ovaries, follicles, and embryos. Finding out more about ovarian follicles, how they work, better ways to lessen damage during chemotherapy treatments and more effective ways to preserve follicles, ovaries and embryos. This in turn allow more people to be open to chemotherapy treatments and radiation therapy. This would also be a very successful discovery, not only benefitting woman dealing with ovarian cancer but all female cancer patients.

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Abstract Categories

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ABSTRACT TITLE: The Role of GnRH Antagonist in PCOS Patients Undergoing IVF

AUTHOR: Rachel Herbst

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: Does the GnRH antagonist suppression of LH in PCOS women promote increased IVF success rates?

The participant will be able to demonstrate: The poster will show the connection between increased IVF success rates in PCOS women by suppressing luteinizing hormone levels.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

GnRH antagonist can be used to block GnRH receptors, therefore lowering and suppressing the LH levels in PCOS women. This normalizes the LH levels in PCOS women, thereby promoting IVF success rates.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

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Polycystic ovarian syndrome (PCOS) is a condition of an imbalance of female sex hormones and an increase in the production of the male sex hormone, androgen, leading to changes in the menstrual cycle, skin changes, trouble getting pregnant, and small cysts in the ovaries. In PCOS patients, the Luteinizing hormone (LH) secretion surge is higher than in non-PCOS women. Gonadotrophin-releasing hormone antagonist (GnRHa) induces a direct block of GnRH receptor with a rapid decrease in LH levels, preventing this LH surge. By normalizing this LH surge, fertility is promoted, increasing the chances of IVF fertility success in PCOS women. The purpose of this study is to determine if GnRHa increases the success rates of IVF fertility in PCOS women by suppressing LH levels. A correlation between GnRHa and the role in IVF fertility can be determined by administering GnRHa to PCOS women to suppress LH, performing IVF, and following their pregnancy. A correlation between GnRHa and the role in IVF fertility can be determined by administering GnRHa to PCOS women hourly to suppress LH, performing IVF, and following their pregnancy. By analyzing the pregnancy rates, live birth rates, and LH levels of these women, the use of GnRHa to promote pregnancy in PCOS women can be established. Between the use GnRHa to suppress LH in PCOS women, an increase in pregnancy can be established. Using recorded data, an increase in the success of IVF fertility can be seen through the suppression of LH by means of GnRHa. This data can then be analyzed and the conclusion that using GnRHa to suppress LH in PCOS women thereby increases IVF fertility is reached. In conclusion, a direct comparison and observation has been made between the use of GnRHa to suppress LH in PCOS women and suggests an increase of IVF success rates.

REFERENCES:

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Oncofertility Saturday Academy Poster Abstract Form

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Abstract Categories

Check one only:

- Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: Do Successful Pregnancies After IVF Reduce Endometriosis Recurrence?

AUTHOR: Gidsela Luna

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: Is there a reduction of endometriosis when patients undergo successful IVF?

The participant will be able to demonstrate: The participant will have a deeper understanding of the possible causes of endometriosis and its association with infertility. Also how the hormone therapies used in IVF does not have a long time risk of the recurrence rate or progression of endometriosis despite it being a hormone dependent disorder, which it may help reduce it.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

Infertility is present in woman with endometriosis, even in mild-moderate stages. IVF is a hormone stimulated procedure, which 10-25% of infertile patients turn to for successful pregnancies. Studies done on patients with endometriosis show that the exposure to hormones does not seem to cause a recurrence of endometriosis after successful IVF, and how the increase/exposure of hormones and absent of menses may help potentially cure or reduce it.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

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Endometriosis is present within 10% of the female population; the major aspects of this disease are still put into question even with the amount of research conducted throughout time. One of the most complex problems involving Endometriosis is its possible links with infertility. In observations completed in clinics, infertility is present even in mild-moderate stages in Endometriosis. It has been proposed that patients with this disorder have poor oocyte and embryo quality with a reduced ability to implant, which can lead to few fertilization rates. Normally when a woman goes to a clinic, they are presented with the option of IVF, a therapeutic method that would allow them to get pregnant, possibly cure endometriosis and have a child. Or there is the option of being given drugs and surgery, however would reduce their fertility. Some attentions have been put about the long term affects that occurs in patients who undergo IVF procedures. Since endometriosis is known to be a hormone dependent disease, does it have long term effects of recurrence since IVF is a hormone stimulated procedure, or does it possibly melt the endometriosis away. There have been multiple studies done on the recurrence or progression of this disorder in patients after IVF. A recent study included one hundred and eighty-nine women, who have had a surgical diagnosis of endometriosis. Subsequent to a thirty-four month follow-up when the IVF treatments took place, about forty-one (22%) of women had a recurrence of Endometriosis. An additional study done which included sixty-four patients with a surgical or an echographic diagnosis of IVF, only seven (11%) of women reported a worsening of the disease. Studies suggest that In Vitro Fertilization does not have an impact on endometriosis, and that the increase/exposure to hormones during IVF and the absent of menses during pregnancy may melt the endometriosis away and potentially cure the patient.

REFERENCES:

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Abstract Categories

Check one only:

- Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: The Relationship Between Inhibin B and Premature Ovarian Failure in Women

AUTHOR: Vy Luu

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: Can reduced bioactivity of Inhibin B cause premature ovarian failure in women?

The participant will be able to demonstrate: The poster will demonstrate the role that Inhibin B plays in the regulation of FSH and folliculogenesis. With this information, the poster evaluates the possible correlation between low bioactivity of Inhibin B and premature ovarian failure.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

Inhibin B is known to inhibit FSH secretion in women. The normal decrease in the level of Inhibin B in aging women is one of the markers of perimenopause. Reduced bioactivity of Inhibin B can possibly be one of the causes of premature ovarian failure.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

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Premature ovarian failure (POF) is a condition in which the ovaries cease to function before age 40. The cause of POF is still largely unknown in women. Some known factors that can cause POF are cancer treatments, autoimmune disorders, and genetic disorders. Inhibin B is a heterodimer produced by the granulosa cells of small antral follicles and functions as a suppressor of FSH secretion. In normal women, there is an accelerated loss of primordial follicles at the average age of 37. This accelerated loss has been correlated with the monotropic rise in FSH at the age; presumably, the rise in FSH accelerates follicle development thus increasing the loss of follicles. The monotropic rise of FSH has been linked with the decreased level of inhibin B caused by the diminished ovary reserve in older women. The purpose of this study is to determine if reduced bioactivity of inhibin B has a role in the cause of premature ovarian failure in women. One particular mutation in the inhibin α subunit gene, G769A, has shown to compromise inhibin B bioactivity. A study was conducted using mouse gonadotropic cells and human granulosa and embryonic kidney cells to express the wild-type and mutant gene. The cells with the mutant gene showed reduced level of inhibin B bioactivity. Five population studies have reported the incidence of the INHA G769A mutation in women with POF and controls. Three of the studies reported an association between the INHA G769A mutation and POF while the other two studies showed no association between the mutation and POF. While the results varied between populations, there is still a significant link between reduced bioactivity of inhibin B and premature ovarian failure. Reduction of inhibin B bioactivity, however, is clearly not the only cause of POF.

REFERENCES:

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Abstract Categories

Check one only:

- Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: The benefits of GnRH agonist administration before and during gonadotoxic/cytotoxic chemo and radiotherapies to preserve ovarian function.

AUTHOR: Maile Nilsson

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION:

The participant will be able to demonstrate: The benefits of GnRh agonists; specifically preserving ovaries during therapies

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

1. What are GnRh agonists?
2. What mechanism allows for GnRH agonists to protect ovaries during gonadotoxic/cytotoxic therapies?
3. Inconclusive evidence from studies (not randomized and small samples); needs to be further explored

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

Cancer survival rates in young women are improving due to progress in treatment; aggressive chemotherapy and radiotherapy (use of agents such as Cyclophosphamide and Chlorambucil to cure childhood and adult cancers) has been successful but often poses a threat to fertility (ex: premature ovarian failure POF). The degree and level of damage depends on the dose, irradiation field and age but GnRH agonists (GnRHa) were proposed as ovarian protectors during gonadotoxic/cytotoxic therapies. GnRH agonists are synthetic peptides modeled after the hormone GnRh that interact with the receptors to release the pituitary hormones FSH and LH. There are several possible ways through which GnRHa may protect the ovary; one being reduced levels of gonadotrophins. In the adult ovary, primordial follicles are recruited to undergo the selection process where the majority will undergo atresia and only one becomes the dominant follicle. The basal follicular growth is independent of gonadotrophins and it is possible that suppressing the gonadotrophin level with GnRHa preserves these follicles. GnRHa has also been shown to protect against doxorubicin-induced apoptosis, suggesting GnRHa protects ovarian cancer cells from stimulated apoptotic cell death and chemotherapy-induced fertility reduction. The clinical observation that prepubescent girls are less susceptible to ovarian damage (due to chemotherapy) was the original rationale for using GnRHa during chemotherapy and creating an artificial prepubertal state might provide ovarian protection. GnRHa are well tolerated and may protect long-term ovarian function and agonists are widely available drugs, administration is simple and side effects are few- making them an ideal fertility-preserving therapy. Some examples of GnRHa that have been used in clinical studies are tryptorelin, goserelin, leuprolide and buserelin. Unfortunately results of published studies are neither consistent nor convincing because of unsatisfactory study designs (no randomization) and inadequate sample sizes. Another unfavorable argument against GnRHa is although the duration of most co-treatment is less than 6 months, long-term use has been associated with osteoporosis, even among younger cancer patients. The beneficial effect of GnRHa co-treatment for preservation of fertility of any woman that is exposed to alkylating agents/chemotherapy must continue to be explored.

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Oncofertility Saturday Academy Poster Abstract Form

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Abstract Categories

Check one only:

- Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: **The Role of Viral Proteins E6 and E7 in the Development of Cervical Cancer**

AUTHOR: **Joanne Oh**

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: **What is the role of the viral proteins E6 and E7 in the development of cervical cancer?**

The participant will be able to demonstrate: This poster will demonstrate the how the E6 and E7 affect important factors that prevent tumors and allow the proliferation of malignant tumors.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

Please provide a brief statement or outline of the content/topic(s) to be presented:

E6 and E7 are viral proteins which deactivate two tumor suppressor genes, p53 and pRB. E6 activates telomerase which prevents apoptosis and E7 has the ability to transform cells. This will cause uncontrolled cell growth and will eventually lead to the development of cervical cancer.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

Standard Research Format

- Overview and Background
- Objective of Purpose (Research Focus or Question)
- Methods
- Results
- Conclusions
- List of references (At least 5; not to be included in 250-300 word count.)

Over 120 human papillomaviruses have been identified. Of these, twelve have been identified as high risk HPVs. The human papillomavirus genome is composed of six early (E1, E2, E3, E4, E6, E7) and two late (L1, L2) proteins. Of these proteins, E6 and E7 are found to be very critical in the development of an HPV infection into cervical cancer. The purpose of this research is to find how the viral proteins E6 and E7 contribute in the development of cervical cancer. Mice with E6 and E7 were treated with a two-step carcinoma treatment with DMBA and TPA and monitored every three days for twenty weeks. Seven weeks later, skin lesions were detected in the mice. The result was that the E6 protein has the ability to interfere with the p53 tumor suppressor activity and also can activate telomerase to allow unlimited cell growth. To surmount proapoptotic activities of p53, high risk HPV E6 forms a complex with p53 and cellular ubiquitination ligase E6AP, therefore resulting in the modifying due to attachment by the ubiquitin protein and rapid degrading of the p53 tumor suppressor. High risk HPV E7s associate with hypophosphorylated pRB and targets it for proteasomal degradation. Furthermore, the functions of high risk E7 are tightly correlated with the ability to transform cells. It has been suggested that the interaction between p600, a retinoblastoma protein-associated factor, and E7 may deregulate anoikis, or programmed cell death. This interaction also protects detached cells from apoptosis, thereby contributing to viral transformation. These studies showed that E6 and E7 inactivate two tumor suppressing genes, p53 and pRb, and modify the cell cycle in order to amplify the viral genome replication. This leads to a tumor which further will result in cervical cancer.

REFERENCES:

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Oncofertility Saturday Academy Poster Abstract Form

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Abstract Categories

Check one only:

- Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: The Influence of Nicotine/Cotinine on Human Egg Fertilization, and on the influence of tetrahydrocannabinol (THC) and Alcohol on Reproductive Endocrine Levels

AUTHOR: Rayna Shah

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: What is the influence of nicotine/cotinine on human egg fertilization, and tetrahydrocannabinol (THC) and alcohol on reproductive endocrine levels?

The participant will be able to demonstrate: The poster will demonstrate the correlation between cigarette and marijuana use and human egg fertilization, and the correlation between marijuana and alcohol use and unbalanced reproductive endocrine levels.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

Content covered will be how nicotine and cotinine, from a cigarette, and THC, from marijuana, harm sperm, making them unable to fertilize an egg resulting in a lower fertilization potential. It will also cover how THC and alcohol cause anovulatory cycles because of a decrease in LH, decrease in estrogen, and an increase in testosterone.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

Standard Research Format

- Overview and Background
- Objective of Purpose (Research Focus or Question)
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The objective of this poster is to demonstrate the correlation between cigarette and marijuana use and egg fertilization, and the correlation between marijuana and alcohol use and unbalanced reproductive endocrine levels. In 2002, Lani Burkman conducted a study designed to test the effect of nicotine and cotinine on specific sperm functions including hyperactivated swimming, proper acrosomal changes, and effective binding to the zona pellucida. In 2003, the University of Buffalo conducted a study testing the affect of marijuana on male fertility, examining each subjects' semen for volume, total sperm counts, morphology of the sperm cells, motility, and hyperactivation. A review of 9 studies ranging from 1977 to 2002 regarding how alcohol hinders the female reproduction system was conducted by Emanuele et al., taking into account age, normality of menstrual cycle, hormone balances, and amount of alcohol. The sperm exposed to nicotine and cotinine had decreased tight binding to the zona, acrosomes were being modified too quickly, and hyperactivation was either too slow or too fast depending on the drug dosage. In the men intoxicated by marijuana, a reduction in the total sperm count and semen volume was found, as well as sperms being unable to fertilize the egg due to the THC found in the reproductive organs of women who smoke marijuana. THC also causes a decrease in LH secretion resulting in anovulation. Nicotine or cotinine, from cigarettes, disable sperm, not allowing the sperm to fertilize the egg and prevents pregnancy. Women who smoke marijuana may have a slightly increased risk of infertility due to anovulatory cycles because of a decrease in LH secretion. All 8 studies in the review of alcohol and female reproduction proved that alcohol could cause infertility, showing that alcohol use alters hormone levels—decreases estrogen levels, increases testosterone levels, and reduces LH—and disrupts normal menstrual cycling.

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Oncofertility Saturday Academy Poster Abstract Form

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Abstract Categories

Check one only:

- Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: The Chemopreventive Efficacy of Oral Contraceptives in Reducing the Risk of Epithelial Ovarian Cancer

AUTHOR: Rebecca Songer

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: Does the contraceptive formulation or duration of use impact the prevention of epithelial ovarian cancer?

The participant will be able to demonstrate: This poster will demonstrate that the protection afforded by oral contraceptives against epithelial ovarian cancer is independent of the dose of estrogen or progestin as well as the androgenicity of the OC, but is dependent on the duration of OC use.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

1. Information about ovarian cancer and survival rates.
2. Data and discussion of OC formulations, their androgenicity, and their effect on the prevention of epithelial ovarian cancer.
3. The results of studies evaluating duration of OC use and impact on prevention of epithelial ovarian cancer.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

Standard Research Format

- Overview and Background
- Objective of Purpose (Research Focus or Question)
- Methods
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- List of references (At least 5; not to be included in 250-300 word count.)

Ovarian cancer is the most common cause of cancer deaths from gynecologic tumors in the United States. The lifetime risk of a woman developing ovarian cancer is 1 in 70. With the consistent finding that the use of oral contraceptives reduces the risk of ovarian cancer, it is important to determine which characteristics of this chemopreventive agent contribute to its efficacy. Research shows that women who have taken oral contraceptives are about one third less likely to develop ovarian cancer than women who have never used them. Different formulations of oral contraceptives including assorted combinations of estrogen and progestin have been evaluated for their impact on reduction of ovarian cancer risk. Additionally, progestins with varying androgenic properties have been evaluated for impact. Data for the duration of use of oral contraceptives was collected from interviews with women who met case study criterion such as diagnosis of epithelial ovarian cancer. Results show that the protection afforded by oral contraceptives against ovarian cancer is independent of the dose of estrogen or progestin. Furthermore, the androgenicity of an oral contraceptive does not alter chemopreventive efficacy. Longer duration of oral contraceptive use also afforded greater risk reduction. Risk was reduced by 10-12% after 1 year of oral contraceptive use and approximately 50% after five years of use. Oral contraceptives are effective chemopreventive agents against epithelial ovarian cancer independent of estrogen/progestin formulation as well as androgenicity. Duration of use of oral contraceptives, however, has a direct correlation with decreased risk of epithelial ovarian cancer.

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Oncofertility Saturday Academy Poster Abstract Form

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Abstract Categories

Check one only:

Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility

ABSTRACT TITLE: **Breast Cancer Survival in Patients with a Mutated BRCA1 Genotype**

AUTHOR: **Mikayla Stern-Ellis**

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: **Do carriers of the mutated BRCA1 genotype have decreased breast cancer survival rates?**

The participant will be able to demonstrate: How a mutated BRCA1 genotype affects the probability of survival for breast cancer patients. Also, how a greater risk of death is caused by this mutated gene through the difference in the tumor severity and the greater chance for other cancers to form.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

It is known that there is a correlation between a mutated BRCA1 gene and the onset of breast cancer, but there is still debate on whether this mutated gene affects breast cancer survival. Research on this topic will be analyzed to come to the conclusion that a mutated BRCA1 gene increases breast cancer related mortality.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

Standard Research Format

- Overview and Background
- Objective of Purpose (Research Focus or Question)
- Methods
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BRCA1, or Breast Cancer 1, is a tumor suppressor gene located on chromosome 17 that is important in regulating the growth of breast epithelial cells. When there is a mutation in one of the alleles of this gene, women are at greater risk of developing breast and other female reproductive cancers because the other allele could easily be damaged, mutated, or lost. Although we are aware that a BRCA1 mutation can lead to breast cancer, it is still debated whether or not this gene affects survival from breast cancer. Is there a disadvantage to being a mutated BRCA1 gene carrier when attempting to survive breast cancer? Mark E. Robson and colleagues genotyped 496 women who were undergoing breast-conserving treatment for invasive cancer. They archived tissue blocks for the DNA in search of the BRCA1 mutation. The genotyping found 56 out of 496 women that had a BRCA1 mutation, and after a follow-up period of 116 months, breast cancer specific survival was worse in those with the BRCA1 mutation versus those without. Women who had a BRCA1 mutation had a 62% survival rate at 10 years versus non-carriers who had an 86% survival rate. Overall, BRCA1 mutations are associated with reduced survival rate in women undergoing breast cancer. This could be due to the fact that BRCA1 mutation carriers seem to have higher-grade tumors that are more aggressive and increase mortality rates. There is still much debate over this topic, but if we can genotype more women with a history of breast cancer in their family before they develop it themselves, we can save more lives and prevent cancer.

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Abstract Categories

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- Reproductive Biology
 In Vitro Fertilization
 Cancer Biology
 Oncofertility
 Other _____

ABSTRACT TITLE: Advances in Monoclonal Antibody Therapy for the Treatment of Ovarian Cancer

AUTHOR: Julia M. Thackrey

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

Question: How do current advancements in monoclonal antibody therapy provide more effective methods of treatment for ovarian cancer?

The participant will be able to demonstrate: advances in monoclonal antibody therapy, in particular the alteration of the sTn antigen, which improve the treatment of ovarian cancer and include potential for a vaccine.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented: Advancements in monoclonal antibody therapy that increase binding of the antibody to the tumor site offer potential improved treatment of epithelial ovarian cancer (EOC). Additionally modifying antigens commonly found in EOC tumors elicits a greater immune response. Further application of these advancements offers the possibility of an ovarian cancer vaccine which would be useful both in prevention and omission of recurrence.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

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Abstract

Ovarian Cancer is the most lethal of all gynecological malignancies. Lack of early detection methods and recurrence lead to poor prognosis and a low 5 year survival rate. Epithelial ovarian cancer (EOC) is the most common type of ovarian cancer accounting for more than 80% of all cases. Monoclonal antibody (mAb) therapy works by introducing an antibody which attaches to the tumor site. The antibody can cause the patient's own immune system to target and destroy cancer cells or it can serve as a receptor cite for radiotherapies. Although monoclonal antibody therapy has been used as an effective treatment for many types of cancers, it has been only marginally effective in the treatment of EOC for 2 primary reasons: EOC cells are smaller than antibody cells making it difficult for antibodies to bind to the tumor; even when antigens are bound to antibodies, they fail to effectively elicit an immune response. Advances in monoclonal antibody therapy demonstrate improvement in the treatment of EOC as well as offer potential for a vaccine. In a recent study, modifications were made to the sTn antigen, an antigen that commonly occurs in EOC tumors but rarely occurs in normal tissue. Four lab created derivatives and their protein conjugates were tested in mice. The altered sTn antigen glycoproteins showed an increase in antibody attachment and provoked T-cell dependent immune response. The derivative antigens proved to be more immunogenic. Additionally, the sTnNCIPhAc derivative form showed potential as an EOC vaccine. Applications of these results could effectively improve the use of mAb therapy in the treatment of EOC.

References:

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Engel, J. B., Schally, A. V., Dietl, J., Riezer, L., Honig, A. (2007). Targeted Therapy of Breast and Gynecological Cancers with Cytotoxic Analogues of Peptide Hormones. *Molecular Pharmaceutics* 4(5), 652-658

Wang, Q., Guo, Z. (2011). Synthetic and Immunological Studies of sTn Derivatives Carrying Substituted Phenylacetylsialic Acids as Cancer Vaccine Candidate. *ACS Med. Chem. Lett.*, 2, 373-378.

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Abstract Categories

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Reproductive Biology In Vitro Fertilization Cancer Biology Oncofertility
 Other _____

ABSTRACT TITLE: **Effects of Cancer Radiation Therapy on Sphingosine-1-Phosphate Treated and Untreated Oocytes**

AUTHOR: **Stazia Tronboll**

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: Does sphingosine-1-phosphate (S1P) treatment provide effective resistance to radiation damage?

The participant will be able to demonstrate: This poster will demonstrate that by coating oocytes with sphingosine-1-phosphate, quality is maintained and survival rate increased. It will also evaluate the practical application of the compound as a viable treatment for cancer patients.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

S1P is known to inhibit apoptosis and decrease fragmentation in oocytes. By administering it prior to radiation therapy, oocytes are protected from radiation damage. This is especially useful to pre-pubescent cancer patients, as it guards the immature ovary, allowing it to mature normally after treatment.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

Standard Research Format

- Overview and Background
- Objective of Purpose (Research Focus or Question)
- Methods
- Results
- Conclusions
- List of references (**At least 5; not to be included in 250-300 word count.**)

As cancer survival rates increase, a quality-of-life issue - primarily in young patients - has become prevalent. Treatments that preserve a patient's life often damage or eradicate fertility. Several options for fertility preservation have been developed, most prominently IVF and cryopreservation of the egg, fertilized embryo, or ovary. These ex vivo procedures are functional, but invasive and success is uncertain. In vivo methods such as injection of Shingosine-1-Phosphate (S1P), a compound known to inhibit apoptosis (natural cell death, unnecessarily triggered by radiation) are undeveloped, **and may** provide non-invasive techniques for saving fertility in cancer patients. S1P injection may be especially helpful for pre-pubescent girls, and patients who must be treated within hours of diagnosis. Past studies have used rats, but to test viability in models closer to humans, primates were used. In addition to twelve rhesus monkeys used to provide ovarian environments almost identical to those of human patients, two human females being treated for benign tumors were monitored for one cycle before and after S1P administration and irradiation for estradiol and progesterone levels. S1P was injected directly into the ovaries of six monkeys for one week prior to irradiation; the remaining six were treated with empty vehicle. Three vehicle patients were not exposed to radiation, while all six S1P subjects and the remaining three vehicle subjects were irradiated. Between nine and eleven months afterward, the remaining ovary of was removed. All subjects showed relatively quick resumption of menstrual cycles and increased survival rate of follicles. Offspring of radioprotected primates showed normal development. Ovarian tissue of the human females, xenographed into mice for examination, also showed decreased follicle damage. Thus, S1P is a safe, minimally invasive method of preserving fertility in cancer patients, and has high potential as a treatment for cancer patients.

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Oncofertility Saturday Academy Poster Abstract Form

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ABSTRACT TITLE: The Advantages and Disadvantages of Cryopreservation of Embryos in Comparison with Mature Oocytes

AUTHOR: Kendra Yin

LEARNER OBJECTIVE: Please state the educational objective in a measurable, testable question. Then state what the participant's poster will be able to demonstrate to the viewer(s)/audience.

QUESTION: Why is the cryopreservation of an embryo greater than the new technologies of that to an oocyte?

The participant will be able to demonstrate: This poster will show how after thawing the survival rate of a mature oocyte is less than a cryopreserved embryo. because the cryoprotectant of the embryo is less harmful than the cryoprotectant of an oocyte.

CONTENT (TOPICS): Please provide a brief statement or outline of the content/topic(s) to be presented:

The survival rate of a cryopreserved embryo is higher than that of an oocyte because of preliminary cautions caused by the cryoprotectants harmful effect on the oocyte.

ABSTRACT: Abstract content should be single spaced, typed using (10-12 pt font) and between 250-300 words. The abstract content should be typed in the space below and **MUST** include the following:

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Cryopreservation has always played an essential role in assisted reproductive technology (ART). Cancer affects 1 in every 3 people throughout the world. While the treatments such as chemo therapy and radiotherapy have cured many from their cancers, the radiation could harm a women's reproductive system. Therefore, in order to save themselves from infertility they can choose from In-Vitro Fertilization (IVF), cryopreserving embryos, surrogacy, and in new studies the cryopreservation of an oocyte. The two most commonly used cryopreservation methods are that of an embryo and an oocyte. However, it is thought that the cryopreservation of an embryo is more successful and less damaging than the cryopreservation of an oocyte. Religiously, the cryopreservation of an oocyte is favored because of issues against freezing pre-fertilized embryos. However, this brings a major risk to an oocyte's meiotic spindle's susceptibility to low temperatures as it begins to freeze-thaw, and an increased risk of aneuploidy incidence, otherwise known as an abnormal number of chromosomes. Eggs (oocytes) are frozen using either a controlled-rate, slow-cooling method or a newer flash-freezing process known as vitrification. The slow-cooling method is the most practiced of embryo freezing techniques. The statistics for birth defects are both similar for a cryopreserved oocyte and a natural embryo. The outcome from using cryopreserved embryos has uniformly been positive with no increase in birth defects or developmental abnormalities, also between fresh versus frozen eggs used for intracytoplasmic sperm injection (ICSI) As it is shown in research, the cryopreservation of an oocyte leads to greater complications with the temperament of the oocyte and logically it will affect and later alter the oocyte. In conclusion, research suggests that the cryopreservation of an Embryo has a higher survival rate than that of an Oocyte.

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