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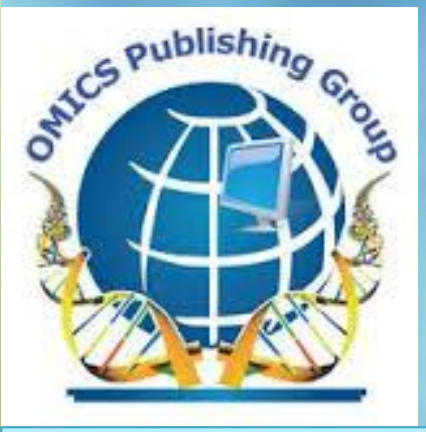

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SAINT LOUIS UNIVERSITY

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RESEARCH INTEREST

We propose that the novel use of Zn as a chemotherapeutic agent for cancer will significantly improve patient outcome. We are using prostate cancer and ovarian cancer tissue culture cells to test the generally applicability of Zn as a cancer treatment. Our research involves evaluating varied means by which we can selectively deliver cytotoxic levels of Zn to cancer cells while sparing non-targeted cells. Additionally, we are investigating the mechanism by which Zn kills cancer cells with the idea of indentifying new pathways and/or targets for additional drug development.

PUBLICATIONS

- **Zinc is a potential therapeutic for chemoresistant ovarian cancer.**Max Bastow, Christopher L Kriedt, Joseph Baldassare, Maulik Shah, Claudette Klein J. Exp. Ther. Oncol. J Exp Ther Oncol 2011 ;9(3):175-81

- **Zinc functions as a cytotoxic agent for prostate cancer cells independent of culture and growth conditions.** J. Exp. Ther. Oncol.J Exp Ther Oncol 2010 ;8(4):287-95

- **Zinc induces ERK-dependent cell death through a specific Ras isoform.**Claudette Klein, Kimberly Creach, Virginia Irintcheva, Katherine J Hughes, Penny Lane Blackwell, John A Corbett, Joseph J Baldassare Apoptosis 2006 Nov;11(11):1933-44

INTRODUCTION

- The ovaries are a pair of small organs in the female reproductive system that contain and release an egg once a month. This is known as ovulation. Cancer of he ovary can spread to other parts of the reproductive system and the surrounding areas, including the womb (uterus), vagina and abdomen.

What Is Ovarian Cancer?

- Ovarian cancer is a malignancy of the ovaries, the female sex organs that produce eggs and make the hormones estrogen and progesterone. Treatments for ovarian cancer are improving, and the best outcomes are always seen when the cancer is found early.

How common is ovarian cancer?

- Cancer of the ovary affects over 315 women in Ireland each year. It is the fifth most common cancer among women after breast cancer, bowel cancer, lung cancer and cancer of the uterus (womb). Ovarian cancer is most common in women who have had the menopause (usually over the age of 55), but it can affect women of any age.

TYPES

- **epithelial ovarian cancer,** which affects the surface layers of the ovary; it is by far the most common type
- **germ cell tumours**, which originate in the cells that make the eggs
- **stromal tumours**, which develops within the cells that hold the ovaries together

SIGNS and SYMPTOMS

- The symptoms of ovarian cancer can be difficult to recognise, particularly in the early stages of the disease. They are often the same as the symptoms of other, less serious, conditions, such as irritable bowel syndrome (IBS) or pre-menstrual syndrome (PMS). The three symptoms are:
- persistent pelvic and abdominal pain
- increased abdominal size/persistent bloating (not bloating that comes and goes)
- difficulty eating and feeling full quickly, or feeling nauseous

CAUSES

- **Family history**
- If you have two or more close relatives (mother, sister or daughter) who developed ovarian cancer or breast cancer, you may be at higher risk of developing the condition.
- If your relatives developed cancer before the age of 50, it may be the result of an inherited faulty gene. Faulty genes that have been linked to ovarian cancer include BRCA1 and BRCA2. They are also known to be linked to the development of breast cancer.

- **Age**
- Your risk of ovarian cancer increases with age. Most cases of ovarian cancer occur after the menopause, in women who are over 65 years old.
- **Hormone replacement therapy (HRT)**
- Women who take hormone replacement therapy (HRT) have been shown to have a small increased risk of ovarian cancer. However, if HRT is stopped, after five years the risk goes back down to the same risk as women who have never taken HRT.

PREVENTION

- **Stopping ovulation and the contraceptive pill**
- Each time you ovulate, your ovaries are damaged by an egg breaking through and being released into your reproductive system. The cells that make up the surface of your ovaries divide and multiply rapidly in order to repair the damage caused by the egg. It is this rapid cell growth that can occasionally go wrong and result in ovarian cancer.

- Therefore, anything that stops the process of ovulation can help to minimise your chances of developing ovarian cancer. Factors that stop ovulation temporarily or altogether include:
- pregnancy and breastfeeding
- the contraceptive pill
- hysterectomy surgery (removal of the ovaries)

Diet and lifestyle

- Research into ovarian cancer has found that the condition may be linked to being overweight or obese. Losing weight through exercise, and having a balanced diet, may help to lower your risk of ovarian cancer. Aside from this, it is known that regular exercise and a healthy, low-fat diet are extremely beneficial to your overall health, and can help to prevent all forms of cancer and heart disease.

DIAGNOSING

- **Blood test (CA125)**
- You may have a blood test to look for a chemical called CA125 in the blood. This chemical is produced by some ovarian cancer cells and a raised level of CA125 in the blood may mean you have ovarian cancer.
- However, a significant proportion of women with early stage ovarian cancers have a normal CA125 level. The chemical is also produced by other conditions and a raised level of CA125 does not definitely mean you

- **Ultrasound**
- Ultrasound uses high frequency sound waves to produce an image of your ovaries. You may have an internal ultrasound (known as a transvaginal ultrasound), where the ultrasound probe is inserted into your vagina. Or you may have an external ultrasound, where the probe is put next to your stomach. The image produced can show the size and texture of your ovaries, as well as any cysts that may be present.

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