

## Cytokine influencing infertility in women

Cheryl L Jorcyk\*

Department of Biological Sciences, Boise State University, Usa

\*Corresponding author: Cheryl L Jorcyk, Department of Biological Sciences, Boise State University, Usa ; E-mail: cjorcyk@boisestate.edu

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### Abstract

Infertility is the most urgent reproductive health problems found in high rates in females. Although, there are many new reproductive technologies, its prevalence is not decreasing. So, there are many factors which influence it such as the inflammatory diseases and the chronic infections.

### Commentary

Infertility can be due to the chronic cytokines imbalance with the increasing concentrations of pro-inflammatory interleukins. It also leads to the immunoendocrine dysregulation. For understanding the mechanisms of infertility associated with chronic infectious inflammation of reproductive system it is important to first know which biologically active substances are affecting it and at which area is in the direct contact with the area of inflammation.

The reason for the infertility can also be caused by certain bacteria such as *Enterococcus faecalis*, *Escherichia coli*, *Staphylococcus epidermidis* etc. There are many reasons for infertility to happen such as pathological changes in the white blood cell count, erythrocyte sedimentation rate level.

As we know that typically white blood cell count is elevated during pregnancy, the stress imposed on the body through pregnancy causes the rise in white blood cells. There are many factors which affect the fertility rates in females, age is the most important factor affecting fertility, lifestyle factors, weight, smoking, alcohol, medical conditions.

Smoking can speed up the ovarian aging process by bringing an earlier menopause. Heavy alcohol use can also increase the fertility problems. Excessive drinking has linked to lower sperm counts, poor sperm movements, irregular sperm shapes. Putting smoking and reducing alcohol consumption can show positive impact on fertility and will have positive impact on health.

Interleukin (IL-4) play a central role in the development of allergic immune responses. IL-4 is an indicator of humoral immune response and it increases effects the infection process of bacterial origin.

IL-6 is a multifunctional cytokine that is able to detect helper T 2 in responses. It is the pleiotropic cytokine it is provided during in response

to tissue damage and infections. IL-6 is considered one of the most important cytokine during an infection. It is pro-inflammatory cytokine involved in inflammatory and infectious responses and contributing to transformation from acute to chronic inflammation and development of auto immune reaction. If the body is not going through the usual hormone changes that lead to the release of an egg from the ovary and the thickening of the lining of the uterus.

There are some tests that can be used to test for infertility

**Hysterosalpingography (HSG)**- This procedure involves the x-rays or the ultrasound of the reproductive organs. This is done by injecting the dye or saline and air into the cervix, that will travel up through the fallopian tubes. By this it is checked if the tubes are blocked.

**Laparoscopy**- This looks like a slender tube which is filled with a tiny camera by a small cut near the belly button. By this it views the outside of the uterus, ovaries and fallopian tubes for checking the abnormal growth. By this it can also be found if the fallopian tubes are blocked.

Some cancer treatment can also lead to fertility problems like specially by the radiation therapy which is near the reproductive organs.

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