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ROLE OF OXIDATIVE STRESS, THYROID STIMULATING HORMONE, THYROXIN, T4 TO REGULATE, TO TREAT WOMEN OR COUPLES

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Abstract:
The main objective is to check out the exact reason of thyroid issues and stress level started increasing in the women due to an undefined fertility. To study it deeply and make results in BVH Bahawalpur serving infertile couple makes study and gave some results and reasons of infertility and its side effects. They took test of some women, first divided them into 2 different groups, one was group of fertile women and other was those who show infertility, now used serum to examine the Thyroxin, TSH, triiodothyronine and to check stress caused by the infertility in women. After test, results were about 50% with each group, we see change of thyroxin and thyroid stimulating hormone they differ due to different ratio of stress in different women, so we conclude that if we increase the level of thyroxin in those women who show infertility, then they show association with the decreasing serum.

Keywords: *Thyroid stimulating hormones, manganese, infertility, stress.*

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INTRODUCTION:

Mainly we can say that infertility is a disease that happen in both men and women but mostly we check that infertility happens in women who cannot conceive pregnant after most sexual attempts [1], World Health organization, declared it as it's a reproductive issue to those women who can conceive but after this it causes infertility and they cannot not conceive or give birth to a child. In some countries [2], about 4-25% couples are those who are facing infertility where most infertility happens due to women who cannot conceive after regular sex act, that happens due to hormonal issue which causes stress and these hormones help women to become fertile and give birth to a baby but due to imbalance[3]. When women conceive a pregnancy ,and when further procedure started at any stage like zygote ,embryo development ,it may be damaged and cause infertility in women[4], sperms released from men or ovum from female all are exposed to damage [5],due to addition or removal of compounds changes happens in the body and they effect pregnancy and make women infertile [6].Now during period of gestation and hormonal unbalancing harm the reproductive cells[7]. Thyroid stimulating hormone function , during process T3 cells activate new hormone named follicle stimulating hormone with then intercede to the luteinizing hormone, that further procedure out to produce lactogen and progesterone. We declared that the reactive oxidative stress cause several damages when women pregnancy started down, it causes infertility, so balance of thyroid and serum helps to main pregnancy[8]. If we test women with fertility and other with infertility, we will see proper difference as in fertile women will have normal menstrual cycle, other organs will be normal and will not be suffering with hypertension or any type if stress but on the other hand infertile women will show totally opposite results ,she will be effected with hypertension,stress,disturbed menstrual cycle and so on. so balancing is thyroid hormone and stress releasing can cause fertility.

METHODOLOGY:

This case study conducted in BVH Bahawalpur, where they was treating couples who show infertility, after approval they take test by using formula that help them to detect to give treatment to those couples, they examine those women who show infertility, those whose serum was normal and they have normal organs that help to reproduce and periods/menstrual cycle is normal and did not have any issue in release eggs during menstruation. Uterine tube of females were tested with ultrasonography, their co sexual partner show approximately 38-39 million sperm in 60 minutes duration. Overall a healthy man can produce up to 591 billion sperm in whole life. Some of women can conceive easily but some show difficult ,when zygote start to produce ,due to stress or hormonal issue miscarriages happen and then a women become infertile. Somehow infertility can be caused by use of some harmful tablets or tension,stress,diabetes ,thyroid issues etc.At the start of experiment blood samples collected down they keep blood samples at about 60-70 degree .then we use ELISA to monitor thyroid .triiodothyroxinine ,thyroxin and thyroid stimulating hormone detected during this test and check the confidence level approx 95%,oxidative stress and thyroid hormones are monitored out ,they check that test according to their ages and their groups either infertility is in male or female or a couple is fertile or infertile.

RESULT:

In table one it is shown that results was half positive and half of them was negative .thyroid hormones and thyroid stimulating hormones. Oxidative stress show proper different in table 2.

	Fertile Females (n=44)	**Infertile Females (n=44)**	**p-value**
Age(Years)	31.57±6.12	32.33±5.83	0.474
BMI(Kg/m(2))	23.67±1.66	28.59±4.58	<0.001
T3(ng/dl)	131.67±24.04	135.57±32.55	0.494
T4(ug/dl)	9.18±1.53	10.48±1.89	0.001
TSH(mlU/L)	1.12±0.54	1.49±0.76	0.027

(Table: 1) It's a comparison of Thyroid profile.

	Fertile Females (n=44)	**Infertile Females (n=44)**	**p-value**
Glutathione reductase (pg/ml)	854.5±335.4	150.9±53.5	<0.001
MnSOD (ng/ml)	1.01±0.42	6.06±2.73	0.001
Adrenaline (pg/ml)	5.23±2.06	40.13±27.15	0.001

(Table: 2)It's a comparison of oxidative stress markers.

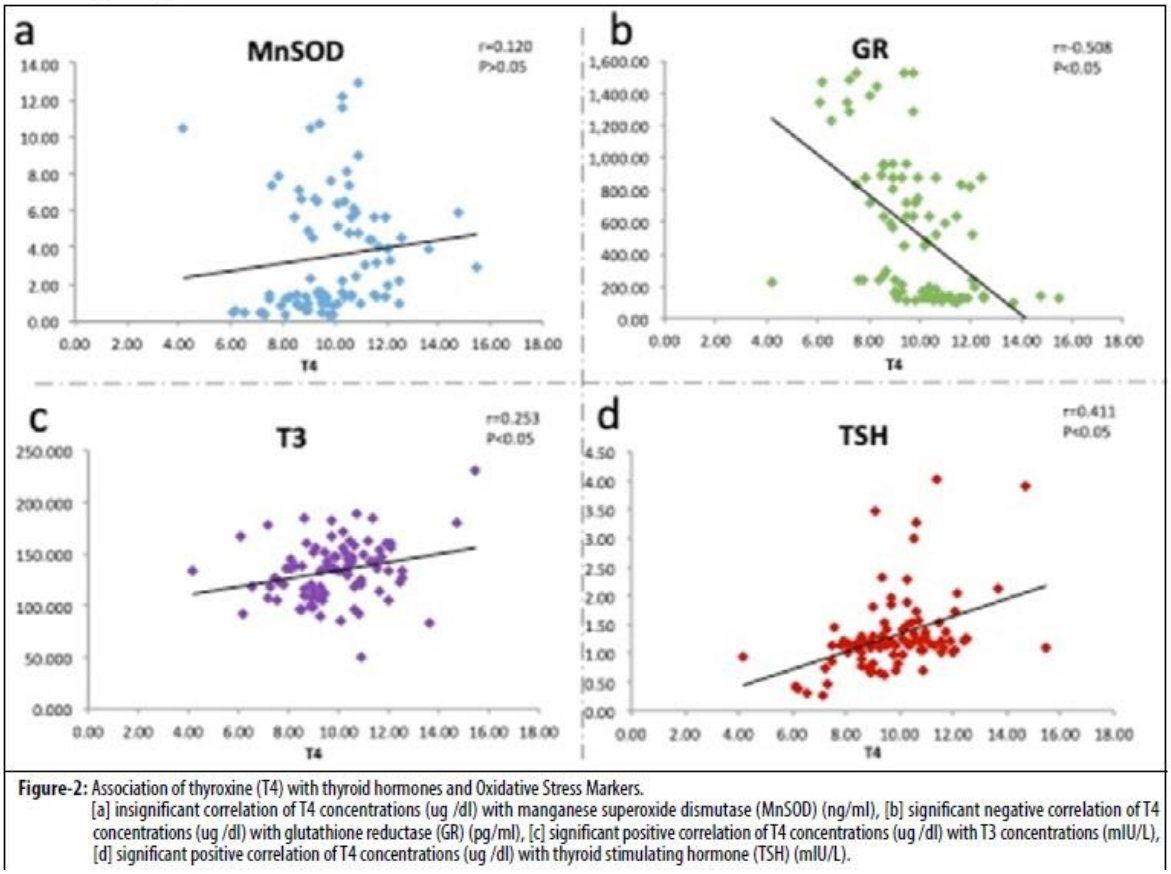

Figure-2: Association of thyroxine (T4) with thyroid hormones and Oxidative Stress Markers.
[a] insignificant correlation of T4 concentrations (ug /dl) with manganese superoxide dismutase (MnSOD) (ng/ml), [b] significant negative correlation of T4 concentrations (ug /dl) with glutathione reductase (GR) (pg/ml), [c] significant positive correlation of T4 concentrations (ug /dl) with T3 concentrations (mIU/L), [d] significant positive correlation of T4 concentrations (ug /dl) with thyroid stimulating hormone (TSH) (mIU/L).

DISCUSSION:

It becomes a challenge to diagnose infertility which relies in tests of uterine tube, uterine cavity, ovulation procedures[9].To treat or give cure to those patient who are suffering from infertility is still difficult ,different types of researches are going on to treat that issue[10].Examining the risks that causes infertility, doctors are trying to neutralize the level of hormones and serum in the patient's body. If their values will be increased or decreased[11] , risk of damaging follicle tube or zygote maturation cause serious infertility[12].Positive effect of thyroid hormone and thyroxin and negative role with thyroid hormone and GR ,that play important role in fertility or infertility in women[13]. Some of anti-oxidants represent glutathione.Our own body can also make Glutathione which do multiple tasks like it can then be changed into food, or other factors like any type of stress or trauma or increasing age symptoms[14],when all these process going on in the body their cycle first end and then continue it again from the start so again our body can reproduce glutathione.Glutatione help body to maintain a balance between all organs and help reproductive organs to do their task with good results[15]. So optimal range of thyroid hormone and to use anti-oxidants women should be able to give birth to child[16].In whole experiment we check it out that there is no difference in triiodothyroxinine but a differ in thyroxin[17].Here in this report we check the relationship between oxidative stress and thyroid status in an infertile women. There should be a proper balance between thyroxin, Thyroid stimulating hormone and triiodothyronine. These three factors have different functions in women body as Thyroid stimulating hormone help to regulate the menstruation in women body[18]. When menstrual cycle will be on time with proper period then reproductive organs can do their work more accurately and chances of conceiving by women will be increased. If OS will be decreased and TSH in the body will be increased it will be harmful for the body and women cannot conceive pregnancy even after regular sexual relationship with partner[19]. In this whole discussion, we said that balancing is very important, still treatment of infertility is challenging for doctors but to treat it with proper balance and by doing every factor like hormonal GR,TSH,TH,T3,T4 or by treating patients when sperm injected into the ovary ad zygote start to develop or to check her menstrual cycle is with proper gap ,her diet ,her other organs do not have any

disability that reduce the chance of fertility, so to check all these circumstances, we may be able to treat a patient and may able to make them fertile.

CONCLUSION:

At the end, we concluded that if thyroid status will be increased then, chances of infertility will be increase to manage thyroid issue with normal ratio in every factor will help us to get rid of that unexplained infertility.

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