Conceptual study on effect of *Krauncha Beeja* (*Mucuna pruriens*) Churna on serum prolactin levels and sperm count vis a vis Bromocriptine.

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Abstract:-

Hyperprolactinemia is detected in patients with infertility, impotence and *hypogonadism*. It is caused by or is associated with variety of pathological conditions such as pituitary adenoma, hypothalamic disorders, hypothyroidism, *adrenocortical tumour* etc. If *hyperprolactinemia* is the reason of *Oligozoospermia* then *bromocriptine* administration will improve sperm count.^[5]

Kraunch Beeja has been described to be useful in various diseases of reproductive system in books of Indian medicines (*Ayurveda*). Clinical research proves its effect on reduction of *hyperprolactinemia*. As it works on prolactin levels it can be used to treat both *Oligozoospermia* and *Galactorrhoea*.

The purpose of this study is to overview the effect of *Krauncha Beeja Churna* on Sr. Prolactin levels

and Sperm count, like the effect of *Bromocriptine*. So that we can propose the use *Krauncha Beeja Churna* instead of *Bromocriptine* to control *hyperprolactinemia* and enhance sperm count.

Keywords - *Hyperprolactinemia, Oligozoospermia, Bromocriptine, Prolactin, Sperm count.*

Introduction-

Infertility is defined as a failure to conceive within one or more years of regular unprotected coitus. One of the main cause for male infertility is low sperm count i.e. Oligospermia. Hyperprolactinemia is amongst the endocrine disorders known to influence male infertility.^[1] Hyperprolactinemia in men is defined by the presence of high serum prolactin levels. It can result from physiological or pathological conditions. Stress and exercise can cause small increase in prolactin levels and are important causes of physiological hyperprolactinemia.^[2]

Previous studies have indicated that stress especially psychological stress, have negative impact on various parameters associated with sperm quality; including sperm concentration, motility and morphology. Chronic exposure to psychological stress is also known to cause variety of pathophysiological changes in neuroendocrine system resulting in altered steroidogenesis and spermatogenesis.

Bromocriptine is generally used to treat hyperprolactinemia but also has its effect on sperm count. It increase the sperm count in the patients with hyperprolactinemia. *Krauncha Beeja* is well known for its Aphrodisiac nature and its influence on the production of Testosterone. The classical texts highlight multiple formulations where this herb has been the choice and member of aphrodisiac and male infertility. It is a renowned potential herb used in the treatment of low sperm count. It is also used as a treatment protocol in hyperprolactinemia.

Macroscopic and Microscopic feature of *Kraunch Beeja*.^[3]

Macroscopic feature	Microscopic feature
Seeds- The colour of the seeds is dark brown along with the spots; usually observed with 1.2-1.8 cm length, 0.8-1.2cm	Seeds- Outermost is a single layer with cells similar to palisade cells. Followed by inner 2/3 layers of testa (outer layer consist of thin walled, ovoid tangentially long cells; inner layer may be

width. They are smooth at touch , hard , difficult to break; with indistinct odour, and sweetish – bitter- taste.	thick walled, beaker or dumb shaped, cells); tegmen is formed by oval shaped, compressed, thin walled parenchymatous cells (some may contain starch grains); cotyledons is formed by thin walled, angular, polygonal, closely arranged, parenchyma cells, possessing starch and aleurone grains; starch grains are usually small, simple, oval or rounded; a few vascular bundles may also be observed along with vessels exhibiting reticulate thickening or pitted surface.
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PROBABLE MODE OF ACTION OF *KRAUNCHA BEEJA CHURNA*

Krauncha Beeja Churna is a rich source of L-DOPA and the metabolites, which includes epinephrine and norepinephrine. It may be linked with the activation of β -adrenergic system by increasing cyclic adenosine monophosphate (cAMP) levels, which in turn regulate carbohydrate metabolism, lipolysis of fat and functioning of genitourinary and gastrointestinal tracts. Levels of cAMP acts on oligozoospermic men; and shows its effect on sperm count.^[1]

Krauncha Beeja Churna possess significantly antiparkinson activity compared with Levodopa. *Krauncha Beeja Churna* restores the endogenous levodopa, dopamine, norepinephrine and serotonin content in substantia nigra.^[7] The degenerating dopaminergic neurons in substantia

nigra may increase complex-I activity. The neurorestorative action is the additional finding which has its effect on PRL modulators.^[6]

DISCUSSION-

Bromocriptine treatment 2.5mg – 7.5mg daily for 8-16weeks lowers the raised prolactin levels and brings it to normal levels, according to the available research publication in patients with oligosthenospermia , bromocriptine showed marked increase in sperm count and sperm motility. Bromocriptine induced suppression of Sr. PRL allows the circulating gonadotropins act on the gonads, thus stimulating steroidogenesis.

Krauncha Beeja Churna is taken in dose of 3-6gms per day for 3 months. It helps in some way against stress , L -dopa is the main chemical constituent of *Krauncha Beeja* which

has dopaminergic action which shows its effect on hypothalamo- pituitary - gonadal axis. L-dopa the main phenolic phyto constituent ensures this herb to be the national herb of choice in male infertility.^[2] L- dopa also has its action on hyperprolactinemia which shows its effect on increasing sperm count and root cause of infertility gets cured and facilitate conception.

CONCLUSION –

Hormone assessment is an integral part of male infertility evaluation amongst the different components of HPG axis, prolactin plays an important role in the pathophysiology of male infertility potentially altering semen production. Hyperprolactinemia has been linked to a state of hypogonadism and a reduction in semen quantity as well as quality. Treatment of hyperprolactinemia leads to an improvement in reproduction function health and well-being.^[4]

So, We can conclude from the above study that Bromocriptine shows its effect on hyperprolactinemia and is responsible for increase in sperm count, likewise according to ayurvedic classics we can conclude that *Kraunch Beeja* has its effect on

hyperprolactinemia and increases the sperm count.

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