

## DRUG RESEARCH

### HOMOEOPATHIC DRUGS IN ENDOCRINOLOGICAL DISORDERS AN EXPERIMENTAL APPROACH

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#### Abstract

*Hormones secreted by endocrine glands are vital and most important for normal functioning of the body. A deficiency or over secretion of any hormone i.e. hormonal imbalance produced biological disorders. In homoeopathy, many preparations, either in mother tinctures or in potencies are available for control/ cure of various endocrine disorders. The general concept of endocrinology and experimental studies carried out with homoeopathic medicines in laboratory animals are being discussed in this article which support to strengthen scientific claim for the use of homoeopathic medicine in endocrinology.*

Homoeopathic medicines are regularly used by its physicians for various endocrinal disorders on the basis of subjective and objective symptoms of individual patient. They are effective clinically (1), but the scientific proof of their beneficial effects is lacking. Experiments on laboratory animals is thus essentially needed to know the drugs therapeutic potentiality on various endocrinal disorders and also to explore the possible mechanism of action of such drugs in regulating their effects on respective endocrine disorders. Though the field of endocrinology is very vast and lot of work could be undertaken. In this article, some of studies carried out by us are presented in concised form.

#### Preliminary Toxicity Studies

In medical practice one of the most important fundamental prerequisite for introduction of a new drug or formulation in clinical practice is to evaluate therapeutic efficacy and the level of safety of the drugs in laboratory animals. It is more desirable for the drugs used for endocrinal disorders because the drug has to be used for long duration. Therefore, it is very much needed to have detailed data for their toxic/ side effects and the level of safety in order to get clearance of drug from FDA.

Preliminary toxicity studies of 53 homoeopathic drugs in mother tincture form were undertaken in both albino mice and rats. Animals were given drugs in different doses. (0.1ml., 0.2ml. & 0.3ml./100gm.b.wt.) for 30 days. Autopsies of all animals died during the course of drug treatment and sacrificed at the end of experiments were performed to dissect out endocrine glands for histopathological studies.

Besides determining the safety dose level, gross effects of each drug on endocrine glands viz., pituitary, thyroid, parathyroids, adrenals, pancreas, ovaries and testes were observed and reported in various annual reports of drug standardization research of the council(2,3,4). Detailed toxicity study of homoeopathic drugs in laboratory animals has also been reported by Singh and Varma(5,6).

#### Anti-diabetic Effect of Homoeopathic Drugs

Diabetes mellitus is a global problem with projected world prevalence in excess of 200 million diabetic persons during the next decade and it is the most prevalent of all endocrine disorders. This disorders has long duration and at times if remained untreated or uncontrolled, may have severe and grave consequences leading into coma and eventually death.

Despite of the best efforts made to combat it, diabetes continues to be one of the major problem

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worldwide, especially in India. Though, synthetic hypoglycaemic agents are available in modern system to tackle this problem, their prolonged use causes serious side effects including hematological, cutaneous and gastro-intestinal reactions, hypoglycaemic coma and disturbances of liver and kidney. In addition, they are not suitable for use during pregnancy<sup>7</sup>. Keeping in view above facts, the search of effective and safe hypoglycaemic drug in homoeopathy was explored. Hence, the present study was undertaken to determine the therapeutic efficacy of some of the drugs used in homoeopathy for controlling blood sugar levels.

Diabetes was induced in adult healthy albino rabbits by injecting (i.v) 150mg./kg.b.wt.alloxan monohydrate<sup>8</sup>. The drugs were administered in doses of 0.2ml/kg.b.wt.for 30 days. Administration of *Pterocarpus marsupium* Ø, *Cephalandra indica* Ø, *Momordica charantia* Ø, *Chionanthus virginica* Ø and *Uranium nitricum* 3x had significant hypoglycaemic effect in diabetic rabbits while *Bryonia alba* Ø, *Iodium* 6 and *Phosphorus* 6 did not have any such effects. Histopathological examination of pancreas showed that viable beta cells treated with drugs *P. marsupium* Ø, *C. indica* Ø and *M. charantia* Ø were more active as compared to control group of diabetic animals<sup>9,10,11,12</sup>

### Anti-fertility Effect of Homoeopathic Drugs

Rapid human population growth is creating serious underlying threats to the well being of the Worlds natural and economic resources. The World population is projected to rise over 8 billion by 2025<sup>13</sup>. Today India has the second place in terms of population in the World, but most likely by 2050, it will overtake China to become most populous country on the earth<sup>14</sup>. Despite of global search for anti-fertility agents, how to control population is a big problem before the mankind.

Many hormonal/synthetic contraceptives preparations are available to tackle this problem, but regular use of such contraceptive pills resulted in serious side effects such as irregular bleeding, weight gain, gastro-intestinal symptoms, acne, headache, dizziness, and edema etc. Therefore, the preliminary study was undertaken in order to find out a suitable non- hormonal drug in homoeopathy which is considered to be quite safe and effective.

### Anti-ovulatory Effect

Adult female rats of proven fertility were taken. After confirming the regular estrus cycle of 4 days, the test drugs were administered daily in doses of 0.2ml./100g.b.wt. orally from day one of pro-estrus phase for a period of 12 days i.e. 3 consecutive estrus cycle. Prolongation of diestrus phase and/ or absence of estrus phase was considered as a index of inhibition of ovulation<sup>15</sup>.

Amongst the drugs screened, *Juniperous Sabina* Ø and *Caulophyllum thalictroides* Ø were found to possess anti- ovulatory activity. The treatment of rats with these drugs resulted in prolongation of diestrus phase. Ovaries revealed insignificant development of ovarian follicles. On the other hand *Azadirachta indica* Ø, *Crocus sativa* Ø, *Achyranthes aspera* Ø and *Viburnum opulus* Ø did not have any anti-ovulatory effects<sup>16,17</sup>.

### Anti-implantation Effect

The female rats during its estrus (as evident by presence of large number of nucleated cells) phase were allowed to mate with a fertile male. On next day morning female was considered pregnant if vaginal smear was positive for the presence of spermatozoa. The test drugs were administered 0.2ml/100g.b.wt. once daily orally for 7 days. On day 10th pregnant females were laprotomised under light ether anesthesia and the number of implantation sites were examined in both the horns<sup>18</sup>.

*Juniperous sabina* Ø, *Caulophyllum thalictroides* Ø, *Azadirachta indica* Ø, *Crocus sativa* Ø and *Achyranthes aspera* Ø prevented implantation, but no anti-implantation activity was recorded with *Viburnum opulus* Ø<sup>16,17</sup>.



### Anti-spermatogenic Effect

Test drugs in dose of 0.2ml./100g.b.wt. were administered once daily in adult male mice of proven fertility for 60 days. Testes were dissected out under light ether anaesthesia and processed for histopathological observations<sup>19</sup>.

Amongst the drugs tested, *Lycopodium clavatum* Ø, *Turnera diffusa* Ø, and *Sabal serulata* Ø have been found to possess anti-spermatogenic effects as testes revealed cessation of spermatogenesis, whereas *Vitex agnus castus* Ø did not have any such effects<sup>16,17</sup>.

### Conclusion

Experimental studies in laboratory animals reported here provides a scientific clue for the use of homoeopathic medicines in diabetes mellitus and also a way for developing a new anti-fertility and anti-spermatogenic agents in the Homoeopathy. Further, study is warranted in these areas in order to strengthen above claim for the progress of homoeopathic research.

The information given here regarding the normal functioning of endocrine glands with their pathological conditions associated with hypo or hyper secretion of their hormones with signs and symptoms will be of use to homoeopathic physicians.

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