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This work was started with the intention of screening Suvarnamakshikadi Wati and to substantiate its clinical claims. This formulation is claimed to be effective in a large number of indications. Though the set of experiments which were used by us is not complete, it has given us certain insight into the pharmacological actions of Suvarnamakshikadi Wati.

1. From toxicity point of view this compound appears to be absolutely safe. Its L.D. 50 values could not be established since, it did not produce any lethal effect up to a dose of 2.5 gms/100 gms of body weight.

The sub acute toxicity studies were also conducted which indicate that morphologically, functionally and histologically Suvarnamakshikadi Wati does not produce any untoward effects. It has no histological demonstrable effect on vital organs like liver, kidney, heart, etc. Hence the claim of Ayurvedic scholars that this formulation is not toxic stands substantiated.

2. One of the simple parameter, to evaluate adaptogenic activity is an increase in body weight. Our study indicate that drug therapy with Suvarnamakshikadi Wati does not significantly increase the body weight when used in a dose of 10 mg - 640 mg/100 gms. This indicates that Suvarnamakshikadi Wati cannot be recommended as an anabolic agent.

3. The main claim of Suvarnamakshikadi Wati is in the treatment of anaemia. In our experimentation we have induced anaemia in experimental animals by bleeding them. After establishing
anaemia, drug therapy was started. The study indicate that when used in a dose of 640 mg/100 gms, this formulation produces on improvement in the haemoglobin concentration. This result was positive from day 28 onwards. Though there is improvement in haemoglobin concentration, the dose appears to be definitely on the higher side. Whether a smaller dose therapy given for still a longer duration of time, can produce beneficil effect remains to be the same. But the claim of efficacy of Suvarnamakshikadi Wati in treatment of anaemia stands substantiated.

4. We were interested to explore that effect of Suvarnamakshikadi Wati on sleeping behaviour, and other general activities of experimental animals. for this purpose. we had followed the protocol by Fields. The results indicate that therapy with Suvarnamakshikadi Wati does not produce any observable changes in general behaviour pattern of experimental animals. The animals continue to have their usual exploratory behaviour the drug did not produced any sedative or hypnotic activity. This indicates that Suvarnamakshikadi Wati is not a sedative nor a hypnotic and neither a tranquilizer.

5. It is possible that a number of agents can interfere in metabolism of other pharmacological substances. This is possible, by their activity in the internal milieu in liver. We have studied, an interaction between Suvarnamakshikadi Wati and Pentobarbitone in a model of pentobarbitone induced sleep. The results indicate that Suvarnamakshikadi Wati enhances significantly the pentobarbitone induced sleeping time. This is possible probably by inhibition of microsomal enzymes in the liver which might have increased the availability of
pentobarbitone for its action on the CNS. Our results of inhibition of microsomal enzymes need further exploration.

6. Prior treatment of phenobarbitone is a commonly used model, to study effect of drugs on microsomal enzyme system. After pretreatment with phenobarbitone, pentobarbitone sleeping time was assessed, in the presence of Suvarnamakshikadi Wati. Results have shown that even in this model Suvarnamakshikadi Wati shows evidence of enzyme inhibition. With this result one can strongly predict that Suvarnamakshikadi Wati has liver enzyme inhibiting property. The exact nature of this activity is not known and whether this is specific, with reference to pentobarbitone is not known. Similar studies using other pharmacological agents need to be carried out.

7. Suvarnamakshikadi Wati has been used in a number of CNS disorders. We have studied, some effects of this drug is models of Analgesia like the simple tail pinch method and Radiant heat method. The results indicate that this drug has no effect as far as pain models are concerned. Neither it potentiated the analgesic activity of morphine. This indicates that Suvarnamakshikadi Wati cannot be recommended as analgesic.

Whether it has antiinflammatory and antipyretic activity remain to be studied.

8. Suvarnamakshikadi Wati was subjected to further studies, in models of grandmal and petitmal epilepsy. For Grand-mal epilepsy the model of electro convulsions was used and the results indicate that drug therapy with Suvarnamakshikadi Wati produces partial antiepileptic activity at 160 and 640 mg/100 gm.
Probabaly its antiepileptic potency may be low, however whether it can act as an adjuvant remains to be explored.

In case of chemically induced convulsions a dose of 40 mg/100 gms has produced suppression of pentelynetetrazole induced convulsions only in 33% of the experimental animals. This indicates that, this formulation does not have antiepileptic activity.

9. Suvarnamakshikadi Wati has been used in a number of liver disorders and hence we studied the efficacy of the drug in induced Model of hepatitis. The results indicated that Suvarnamakshikadi Wati produces significant hepatoprotection, in a dose of 160-640 mg/100 gms body weight. It produces significant improvement in parameters like S-albumin, SGOT, SGPT etc. It has not produced any improvement in case of S-ALP. This indicates that Suvarnamakshikadi Wati would be a prospective agent in the treatment of common liver disorders like viral hepatitis, chronic hepatitis, or drug induced hepatitis. It may not be useful in case of obstructive hepatitis. From the field of indigenous drug certain Ayurvedic formulations like Arogyavardhini Phyllanthus Niruri (Blumberg, 1989: 1260-1263) have been successfully evaluated even clinically. Our study indicates that Suvarnamakshikadi Wati needs further studies including clinical evaluation in treatment of liver disorders.

10. Since Suvarnamakshikadi Wati has been claimed to be useful in number of cardiovascular diseases, we were interested to know its effect in acute cardiovascular models. Since the formulation cannot be used as such intravenously, Suvarnamakshikadi Wati was subjected to extractive procedures. Suvarnamakshikadi Wati
was initially extracted in 50% hydroalcoholic solution and later sequentially in Petroleum ether Suvarnamakshikadi Wati chloroform. In all 500 gms of original compound of Suvarnamakshikadi Wati gave an yield of around 14%. This was dissolved in 50% alcohol and used for CVS experiments.

When this extract was given IV, it produced a dose dependent full BP. and maximum fall was observed with a dose of Suvarnamakshikadi Wati. On further experimentation, it was observed that this extract has a direct vasodilator activity which is not mediated through either adrenergic or cholinergic system. This fall was not associated with reflex tachycardia, which indicates its cardio stabilizing activity. It did not produce any visible cardiac arrhythmias.

Similar results were observed when the compound preparation Suvarnamakshikadi Wati was given orally. This indicates that the effect of Suvarnamakshikadi Wati, its extracts are similar. This however dose not completely substantiate the claims of Ayurvedic practitioners that Suvarnamakshikadi Wati has beneficial effects in CVS disorders/diseases.

11. The main indication of Suvarnamakshikadi Wati appears to be as a general tonic or an agent to increase the well-beingness of an individual. This we thought of as an adaptogenic activity and hence a simple test like mouse swimming test was adapted to evaluate Suvarnamakshikadi Wati for its adaptogenic activity. The results indicated that the test compound definitely enhances, the swimming activity, the duration of swimming time.
This is more interesting, when this observation is viewed in the light of non-increase in total body weight. This indicates that Suvarnamakshikadi Wati has a definite adaptogenic activity which needs to be exploited further. Similar results have been reported with other herbal formulations. (Gerifort Ashwagandha etc.)

Further Prospects

Our study does indicate that Suvarnamakshikadi Wati has a good potential to be exploited in diseases like hepatic disorders, Anaemia and chronic debilitating diseases. Though our study concluding prove, these indications, further work may substantiate the claims. The most beneficial point appears to be its absolute safety profile.

In situations like mental Asthenia this drug needs to be further evaluated. LD50, adaptogenic activity may enhance non-specific resistance of an individual so that he can withstand the natural and unnatural steps and spacing of life. There is definitely a need for such type of drugs in clinical practice.

Liver disorders are another field where further work and clinical traits with Suvarnamakshikadi Wati will be highly advantageous. At present, this drug appears to be a prospective candidate in liver diseases.

In a common ailment like anaemia there is definitely a need for effective and safe agents. Presently available pure salts of iron though they are highly effective they also carry a number of side effects, the most important being constipation. Suvarnamakshikadi Wati being a herbal formulation needs to be clinically evaluated in comparison to iron salts.
All these experiments will however require extensive clinical trials and they need to be of the nature of double blind and crossover design. There is a need for efficacious adaptogenic drug. Suvarnamakshikadi-wati may fulfill this requirement if further work is done to explore this possibility.

Suvarnamakshikadi Wati a multi-component Ayurvedic formulation has been claimed to be useful in a number of diseases. Our study substantiate these claims with respect to chronic debilitating diseases (general tonic), hepatic disorders, anaemia and some CVS diseases. Its efficacy in other fields are not substantiated in our study.