Chapter - 3

Objective and Plan of work
OBJECTIVE OF THE WORK

There are a number of allopathic and traditional drugs available for treatment of arthritis. The allopathic drugs, unquestionably the most potent and target oriented drugs are used with unacceptable side effects such as acidity, gastric ulceration etc. Further they offer immediate symptomatic relief rather than an everlasting care.

Plants and plant drugs emerged promising alternative to allopathic drugs in the treatment of rheumatoid and Osteo-arthritis. A number of Ayurvedic, Unani or Siddha formulation have been in use for a number of years. Their efficacy is based on subjective clinical experiences. Such formulations contain a number of herbs and defy even the meticulously planned experimental protocol for standardization and in maintaining uniformity and quality of drugs. Further, it becomes quite complicated to understand how the formulation acts. Data on hundreds of plants showing anti-inflammatory activities is available.

We wished to make a formulation with most potent, yet cheap and easily available, non toxic plant drugs. The objective of the work is to

1. Evaluate Methi (Trigonella foenum-graecum) for its anti-inflammatory activity. This plant was selected as the seeds already exhibited prominent hypo-cholesteraeic activity. Methi seeds are used as a spice. Initial experiments with petroleum ether extract showed encouraging anti-inflammatory activity. It was proposed to under take physical and chemical analysis of methi oil to see its fatty acids profile. We planned to carry out the anti-inflammatory activity of the PE (60-80) extract on acute and chronic models of inflammation.
Chapter - 3  

Objective of the work

2. It is also proposed to incorporate turmeric oleo-resin in the formulation. This plant was selected as Curcuminoids have already been shown to be very effective in inflammatory conditions. This drug is a very popular first aid home remedy in cuts, bruises and swellings. People consume turmeric in their day to day diet as a spices. Curcuminoids are one of the best natural anti-oxidants and hence are expected to arrest progress of cell damage due to cell-lysis and to prevent free radical mediated events in the development of arthritis.

3. Guggal and salai guggal are the most widely used drugs in Ayurveda for arthritis. Recent literature clearly established that the Triterpenic acids, Boswellic acids are very potent molecules in salai guggal. They are reported to be immunosuppressive and also to inhibit lipoxygenase pathway. This suggest that they should be active in chronic cases of inflammation. Hence we took up this drug for incorporation into the combined dosage form.

The Objective of this work is to develop a combination of herbel drugs that has activity on varied aspects of the etiology of arthritis for this purpose, we combined methi oil, turmeric oleo-resin and alcoholic extract of salai guggal.

Thus the over all purpose of the entire exercise is to establish the efficacy of the individual ingredients and to make a combination of herbs which proves to be rationalistic and would be amenable for analysis.
PLAN OF THE WORK

The work is carried out in a stepwise manner. The preliminary step taken before undertaking this work was collection of available literature, its analysis and arriving at a logistic conclusion for the rationalistic combination of different drugs. The experimental protocol was drawn up in the following manner.

1) Extraction of the individual drug in selected solvents and recording the extractive values.

2) Finding out the proper vehicle for administration.

3) To find out proper dose and duration. Study of methi oil at 0.3ml & 0.6 ml/Kg. body weight in wistar albino rats for anti-inflammatory in carrageenan induced paw edema.

4) To study the individual drugs at 0.6 ml/Kg. & 0.6 gm/Kg. body weight in rats for anti-inflammatory and anti arthritis activity in different inflammation models.

5) The oily petroleum ether extract of methi oil was also studied on Fraund's adjuvant induced arthritis in wistar rats.

Since the active constituents of Turmeric and Salai guggal were already established as Curcumin and Boswellic acids. We analysed the Petroleum ether extract for saponification value, unsaponifiable matter, acid value, along with other physical parameters like specific gravity, refractive index etc. Thus the experimental work was planned in such a way as to get extractive values. Data on anti-inflammatory activities of methi oil, turmeric oleo-resin and alcoholic extracts of salai guggal in acute and proliferative models of arthritis. Students T test was applied to find out the statistical significance of the results.