

3.1 Aim:

Thyroid can always be considered as one of your hard-working glands, this is the gland, which tells your body how fast to tick over by generating the known hormone called thyroxine. This is the genre where mostly girls must watch out more, as 1 in 50 women surely gets struck by this problem. To confirm its presence, it is essential to go for a thyroid test.

Who is affected by thyroid disease?

Currently, about 20 million Indians have some form of thyroid disease. People of all ages and races can get thyroid disease. However, women are 5 to 8 times more likely than men to have thyroid problems.

- I. Liquid constituents are more easily absorbed in the body than tablets. This means medicinal properties of a medicine become more prominent in the syrup than in the tablets.
- II. The human body cannot accept the solid form of a medicine; it needs to be transferred into liquid form before getting absorbed. Hence, even if a medicine is taken in the tablet form, it is at first liquefied and then used by the body.
- III. It is found that more than 90% of syrup is extracted and used by the human body whereas maximum 50% of a tablet is actually utilized by the human body and remaining is wasted.
- IV. A syrup starts working within 5-6 minutes, it is extracted really fast whereas a tablet takes nearly half an hour before it actually starts working in the body.
- V. Anyone, even a kid, can take syrup easily whereas millions of people around the world feel nervous in the names of the tablets.

3.2 OBJECTIVE OF THE STUDY: To prepare suitable formulation of solution by one or more methods:

- 1) Solution with heat
- 2) Agitation without heat
- 3) Maceration

To evaluate the prepared powder and solution for parameters like

- 1) Moisture content
- 2) Total Ash values
- 3) Boiling point
- 4) Specific gravity
- 5) Density
- 6) Viscosity
- 7) PH
- 8) Appearance
- 9) HPTLC analysis/HPLC Analysis
- 10) FT-IR studies
- 11) To study *in vitro* drug release profile of prepared solution
- 12) To ascertain release mechanics and kinetics of drug release.
- 13) Comparative study of marketed product if available solution with Allopathy, Ayurveda, Homeopathy etc.
- 14) To perform stability studies as per ICH guidelines.