Summary and Conclusions
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4. SUMMARY AND CONCLUSIONS

The goal of antimicrobial therapy is to eradicate the infectious organism while posing no harm to the host. This presents a greater challenge with fungi than with bacteria due to the similarities in fungal and mammalian cells (Eukaryotic). Thus, the demarcation between toxic effects and therapeutic effects is not so clear. The "ideal" antifungal agent should be effective in low doses, fungicidal in its action, well absorbed, water soluble, stable, have good physical appearance and no chance of relapse or the development of resistance and inexpensive. Clearly it might be unrealistic to expect to achieve such lofty ideals, but we can strive to shift the balance more infavour of the improtant "Positive" features (Alice clark, 1992).

The antifungal principle(s) in the leaf extract of Cassia alata are;

1. effective in low doses
2. well absorbed
3. metabolically stable
4. water soluble
5. delivers assured cure
6. and above all it is cheap involving no cost.

The existing antifungal agents available in market have limited therapeutic spectrum and cause several side effects. Thus Griseofulvin can not cure pityriasis versicolor or acute tinea pedis. Commonest problem with griseofulvin therapy is head ache, sometimes described as a 'muzzy' feeling.
Minor gastrointestinal disturbances such as nausea and abdominal pain are fairly frequently mentioned. Rashes occasionally occur. Urticaria appears to be the commonest (Roberts, 1980). Prolonged Griseofulvin therapy causes severe hepatotoxicity (Doctor's desk reference 1991; Bhutani, 1993). Most of the azoles used in topical applications are insoluble in water and expensive (Holt, 1980; Bhutani, 1993).

The chemotherapy of fungal diseases has progressed far less than that of bacterial diseases. Inspite of intensive efforts by many pharamaceutical companies, progress beyond the finding of major antifungal agents, griseofulvin and the azoles has not yet been achieved. The main reason for the lack of new drugs against fungal infections is the eukaryotic nature of fungi making selective therapy a more difficult task (Prabhavathi, 1992).

The antifungal principle(s) present in the leaf extract of Cassia alata are more effective than the existing antifungal agents in the treatment of superficial mycoses. They are very powerful against Malassezia furfur of pityriasis versicolor and Trichophyton, Epidermophyton and Microsporum of dermatophytoses.

It has long been suspected that a major problem in clinical practice is the lack of patient compliance causing failure of drug therapy or the reason for poor control of the disease (Rowland, 1994). One of the main reasons attributable to non compliance is the cost of antifungals in the treatment of superficial mycoses. Mycotic infections need long term therapy involving several weeks (Roberts, 1980; Bhutani, 1993). But the patient discontinues the
application, due to cost factor, when the clinical manifestations subside resulting in the reoccurrence of the disease. As a result superficial mycotic infections become chronic, causing enormous physical and psychological distress to the sufferers. Since Cassia alata leaf extract is totally inexpensive even for repeated applications the cost factor as a barrier is easily overcome and the patients can get rid of the mycotic infections.

Another factor observed among the patients for the poor compliance is lack of knowledge regarding mycotic infections. They should be well informed that mycotic infections need long term therapy and drugs used for the treatment can be succesful only when the schedule is strictly followed (Roberts, 1980). The antifungal principle(s) of Cassia alata leaf extract deliver assured cure only when therapeutic schedule (Table 3.3) is strictly followed.

The climate, migration, frequency and speed of travel, lack of sanitation, increased use of synthetic garments, use of infected garments, community life, use of common toilets and bathrooms, increased urbanisation, the discharge of fungal propagules into the environment by chronic sufferers all result in increased incidences and prevalences of superficial mycoses (Norman Conant, 1958; Ronald Atlas, 1989, Belec et al., 1991; Das et al., 1995).

Health care systems of all types the world over are in crisis, predominantly in the developing countries, not least in India. The principal losers are the poor, i.e. the myriads of Indians of low socio economic status and their counterparts in other developing countries (Menon and Ramaseshan, 1991). Alleviation of the suffering and amelioration of the diseases are the
ultimate aims of medicinal practice. The problems of ill health in the developing countries can only be solved by a judicious blend of various possible approaches to improve the health. The availability of suitable cost effective pharamacological agents for the treatment of diseases and the relief of symptoms are important components of any health system. One very practical approach is the optimisation of the use of already available, often inexpensive drugs (Smith, 1991).

Throughout our investigation, we came across with patients suffering from superficial mycoses for more than 5 years. They have tried all systems of medicine, underwent all sorts of sufferings, yet, failed to get rid of the disease. Many of these patients were unaware of the therapeutic efficacy of *Cassia alata* leaf extract in the treatment of superficial mycoses, some although, residing very near to *Cassia alata* plant never cared to apply the leaf extract either because of their disbelief over the efficacy of herbal remedies or lack of knowledge about the mode of extraction and application schedule. The present work is an effective solution to all their problems.

### 4.1 Scope for Future Study

The present study can be extended to evaluate the therapeutic efficacy of antifungal principle(s) of *Cassia alata* in the treatment of other fungal infections.