

Evaluation of efficacy of fixed duration (12 weeks) multi drug therapy with newer antileprosy bactericidal drugs in multibacillary leprosy

RMP



SPAR

CLAR

MINO

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- **Leprosy** still remains a **public health problem** in Africa, Asia including **INDIA**, South America and the Pacific region.
- From the **operational point of view** the recommended **duration of treatment** with MDT, **is still too long**.

### **Aims of the Study**

- To evaluate the **efficacy and safety** of **fixed duration (12 weeks)** MDT with four newer antileprosy bactericidal drugs  
**rifampicin**  
**clarithromycin**  
**sparfloxacin**  
**minocycline**

## Patients and Methods

- **30 patients** of **multibacillary (MB) leprosy**
- **Inclusion Criteria**
  - Slit smear positive for AFB
  - More than ten skin lesions
- **Exclusion Criteria**

Pre-treated, pregnancy/lactation, below 15 years and above 60 years, drug sensitivity.

## Patients and Methods

- A detailed history, complete physical examination
- Details about the plan of treatment
- Expected outcome
- Informed consent

## Pretreatment advice and investigations

- All patients were subjected to slit skin smear examination and a skin biopsy
- liver function tests  
renal function tests  
haemogram  
chest x-ray  
urine examination  
stool analysis

## Treatment administered

- **Group I** - **Daily dose** of oral  
RMP 600 mg on an empty stomach  
MINO 100 mg  
SPAR 200 mg | after breakfast  
CLAR 500 mg |  
for 12 weeks
- **Group II** - **WHO/MDT/MB** for one year

## Follow up

- Both the groups were evaluated
  - every 2 weeks for a period of 4 weeks
  - every 4 weeks till 12 weeks
  - every 8 weeks till the end of 48 weeks
- Evaluation for clinical improvement erythema, induration, sensation and disappearance of lesions
- bacteriological evaluation (BI and MI)
- Type I or type II lepra reaction
- Adverse reactions

## Results

- The study included 28 (93.3%) male  
2 (6.7%) female patients
- The mean age - group I 27.67 ±13.08 years  
- group II 31.50±17.03 years
- The duration of the disease 1.5 months - 48 months
  - group I 21.03 ±12.11 months
  - group II 18.46 ±16.10 months

## Results

- Group I –
  - 4 (22.2%) lepromatous leprosy (LLp)
  - 4 (22.2%) sub-polar lepromatous leprosy (LLs)
  - 10 (60%) borderline lepromatous leprosy (BL)
  - Nine downgraded borderline tuberculoid leprosy
- Group II –
  - 1 (8.3%) lepromatous leprosy (LLp)
  - 11 (91.6%) borderline lepromatous leprosy (BL)
  - Eight downgraded borderline tuberculoid leprosy

## Evaluation of the response to treatment

- The net percentage improvement in clinical parameters – end of 48 weeks
  - Group I - 73.05%
  - Group II - 66.6%
- The net clinical improvement was better in group I at 2, 4 and 12 weeks

## The net percentage improvement clinical parameters

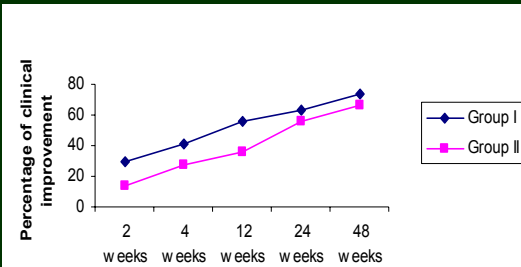


Fig. 2 : Net percentage clinical improvement

## The net percentage improvement different clinical parameters

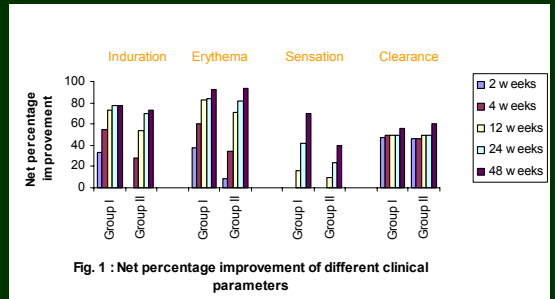


Fig. 1 : Net percentage improvement of different clinical parameters



Pre-treatment lepromatous leprosy patient in group I



Same patient post-treatment after 48 weeks



### REDUCTION IN BACTERIOLOGICAL INDEX

- Group I

- BI -  $3.72 \pm 1.8$  baseline
- $3.5 \pm 1.71$  12 weeks
- $3.31 \pm 1.6$  24 weeks
- $3.02 \pm 1.5$  48 weeks

- Group II

- BI -  $3.35 \pm 1.6$  baseline
- $3.23 \pm 1.56$  12 weeks
- $3.03 \pm 1.48$  24 weeks
- $2.62 \pm 1.46$  48 weeks

- The net percentage of reduction in BI after 48 weeks was  $19.17 \pm 4.29$  ( $p=0.98$ ) and  $18.18 \pm 3.18$  ( $p=0.9$ ) in group I and II respectively

### Reduction in bacteriological index

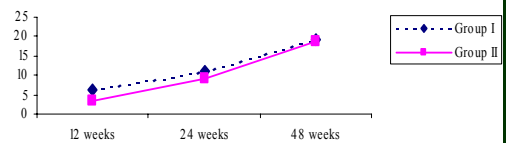
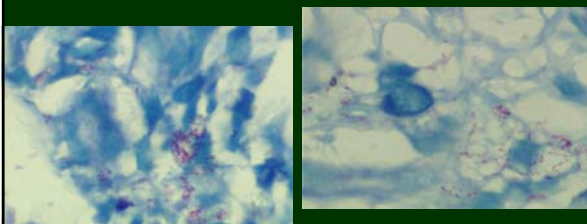
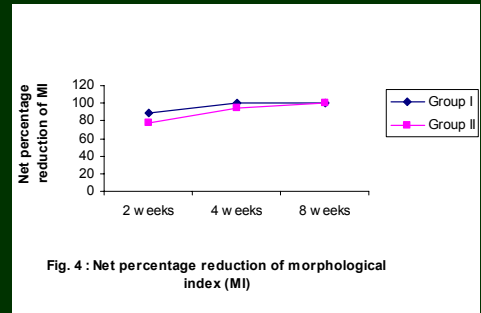


Fig. 3 : Net percentage reduction of BI from baseline to 48 weeks

### REDUCTION IN MORPHOLOGICAL INDEX (MI)

- The mean of **baseline MI was  $8.78 \pm 6.45$**  in group I and  **$5.75 \pm 4.97$**  in group II
- Net percentage reduction in morphological index (MI) in both the groups was **100% at the end of 8 weeks**
- The reduction was **faster and earlier in group I** compared to group II at 2 weeks (88.53% vs 78.27%) ( $p=0.012$ ) and at 4 weeks (100% vs 93.95%) ( $p=0.001$ )
- MI continued to be zero till the end of 48 weeks

### Reduction in morphological index (MI)

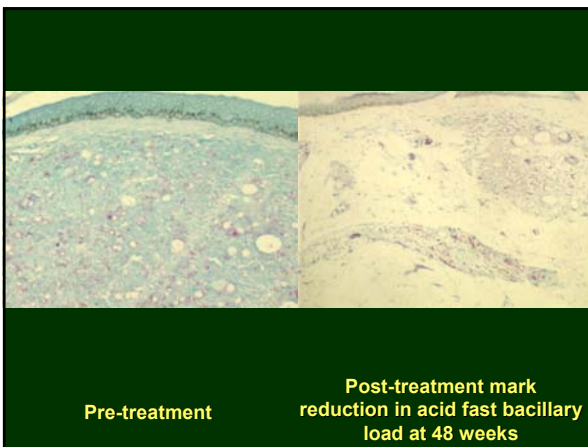
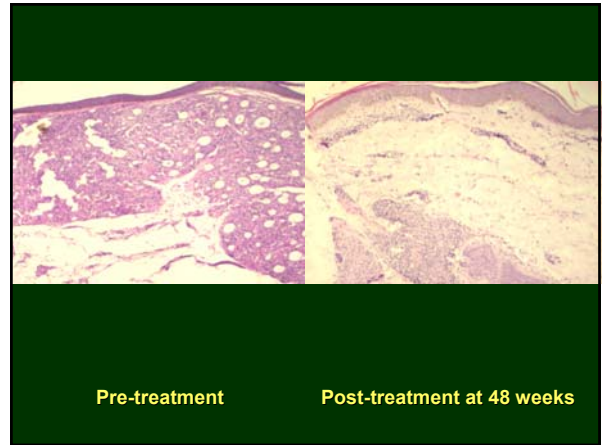
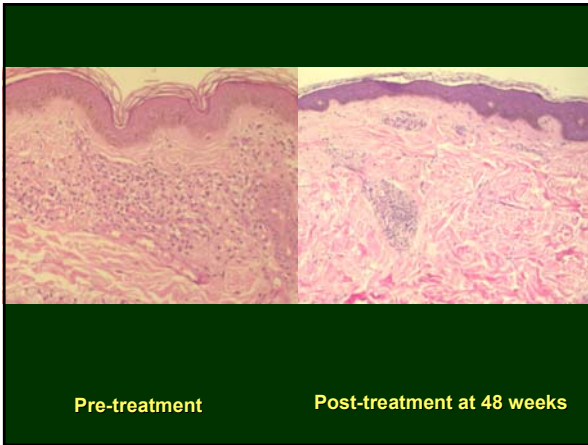


Pre-treatment

Post Treatment at 48 weeks

### Histopathological Examination

- The patients were re-evaluated histologically at 12 weeks and at the end of 48 weeks



## Adverse reactions

- In group I, 7 (38.8%) patients had minimal gastrointestinal side effects, which required no interventions
- One (8.3%) patient in group I had moderate gastrointestinal side effects which required symptomatic medical intervention
- All patients except 2 developed slate gray hyperpigmentation on the face and on the extremities

## Lepra Reactions

- Three (16.6%) patients in group I developed type I reversal reactions
- Two patients required 2 weeks of NSAIDs and their symptoms subsided
- In one patient oral prednisolone 40mg/day was required for 2 weeks, which was tapered over the next 12 weeks
- No patient in group II developed type I reaction during the course of the treatment
- No patient in either of the groups developed type II reactions

## Conclusions

- An **acceptable, effective** and **safe** alternative regimen for the treatment of MB leprosy patients  
**Daily oral doses for 12 weeks** with  
**rifampicin**  
**clarithromycin**  
**sparfloxacin**  
**minocycline**
- This is as effective as the WHO/MDT/MB therapy with minimal side effects and has **tremendous operational advantages**
- This may also reduce the chances of development of **resistance** to any of these drugs

## Conclusions

- Study limitations
  - **costlier** regimen
  - **short post-treatment follow up**
  - **small number (18)** in the study group

These observations need to be further evaluated to evolve a convincingly superior regimen

