

Case Studies



Case Studies: Programme Management Treatment with MDT

Case 1:

Rahman, 35 years old male, on his visit to health center for treatment of his son, was diagnosed to be suffering from leprosy and was registered for treatment. While checking the treatment register at the end of the month, you noticed that he has not come to collect medicine for the fourth month.

Discussion points:

- What are possible reasons for this?
- What action will you take to prevent such incidences in future?
- What modification will have to be made to his treatment?
- Discuss management of irregular treatment and defaulter




Answers:

Possible reasons:

- Leprosy skin lesions are not painful per se and tend to be clinically silent
- He has probably not been counseled properly about leprosy and the potential damage untreated leprosy can cause him
- Health care workers are not looking at their registers and following absentees regularly
- They have not been oriented/supervised properly about leprosy management
- Out reach workers have not been briefed about the case and need for timely retrieval or home visit/delivery of treatment (if justified)

IEC activities and/or its results around where Rahman lives appears inadequate





Action to be taken:

- Health workers to retrieve the absentee
- Find reason for absence and try to solve problems, A- MDT
- Educate/Counsel him either personally or through health worker that:
 - Leprosy skin lesions are not painful per se and tend to be clinically silent
 - Leprosy has the potential to cause permanent and irreversible deformity and damage
 - Leprosy can be treated with MDT and timely treatment can prevent permanent damage
- Intensify IEC activities
- Train health functionaries
- Close supervision and monitoring





Modifications in the treatment:

As person has missed dose of one month, no modification in treatment is required; continue as before

Consider the option of Accompanied - MDT



Case Studies: Epidemiology

Case 2:

Sushma, a multipurpose health worker of a sub-centre in your area informs you that an old woman, on treatment for leprosy, has been abandoned by the family members, and she (Health worker), is unable to convince the family members to keep her in the house.

Discussion points:

- What are the possible reasons?
- How would you solve the problem?
- How such incidences can be prevented in future?



Answers:

Possible reasons:

- Poor awareness due to poor/irregular/badly implemented IEC activities in the region
- Low incidence/prevalence of leprosy in the region & people not aware

Solve the problem:

- Counseling of family members, peers, etc., personally by medical officer
- Intervention through local self govt. officials, administration, police, dept. of social welfare, etc.
- Temporary admission at health facility (as feasible) while administering initial therapy

Action:



Plan and implements intensive IEC activities in the area & sensitize stakeholders



Case Studies: Epidemiology

Case 3:

Lacchu, 42 years old male, came to health center for treatment of skin lesions. He told the doctor that around two years back he had noticed a light coloured (hypo-pigmented) patch on his thigh but, as it caused no problem he did not seek any treatment. Recently, he developed, two more similar patches and got worried. He has been diagnosed as suffering from leprosy and has been registered for treatment.

Discussion points:

- What do you interpret from this?
- How can similar situations be avoided in future? Or
- What specific measures can be taken by you?



Answers:

Interpretation:

- Late reporting
- Lack of awareness – general population,
- Health workers probably not trained to suspect leprosy
- Low importance given to Leprosy by health team
- Irregular/poorly planned-implemented/low penetration of IEC activities

Action:

- Plan and implement intensive IEC activities in the area:
- Re-orientation and refresher training of health care team, in stages
- Intensify leprosy related activities
- Close supervision and monitoring



Case Studies: Epidemiology

Case 4:

Asim, 13 years old boy, has been brought to health center with a wound on the palm of right hand. The wound is painless and claw deformity of the little finger of the right hand was noticed on examination. On eliciting a detailed history it was learnt that the deformity of the little finger developed around six months back and he has been taking treatment for it from a local traditional healer.

Discussion points:

- What does this indicate?
- What intervention do you need to take to control the transmission of the disease in the area?
- What other steps will you take to reduce the likelihood of something similar occurring in the area?





Indicates:

- Rampant unawareness of leprosy in the community
- Probably active transmission of leprosy in the community
- Poor health seeking behaviour
- Health worker not able to suspect leprosy
- Persisting belief in traditional/magical remedies at the expense of scientific proven therapies





Reduce transmission:

- Check records, no: of PAL reporting from area, at what stage (late/ early), their age
- Contact examination
- Intensify IEC activities
- Train health workers to identify leprosy cases and refer them for treatment
- Active survey in the area/ need for improved community surveillance and disease mapping

Action to prevent in future:

- Need for well planned IEC strategy to overcome above situation in the community
- Plan & Train health workers



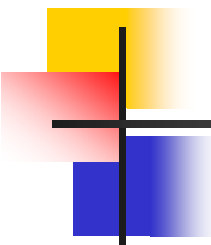
Case study: Pathogenesis/ reactions

Case 5:

Mr. Suresh, a 47 years old male, diagnosed as MB leprosy, was put under MDT immediately. He developed lepra reaction, after 3-4 months of starting MDT, and anti reaction treatment was started with Prednisolone, 40 mg daily. When reviewed before releasing from treatment, lesions were found to be clinically active. He was examined for Bacterial Index (BI) & Morphological Index (MI), which was reported as BI = 3+ & MI = 12 %.

Medial Officer advised him to continue MDT for another 12 months. After completion of 18 months of MDT (total), he was re-examined again for BI & MI, which showed BI = 2+; MI = 5%. Before the completion of 24 BCP, BI & MI, was reported to be BI = 1+ & MI = 2%.





The patient was referred to the state medical Board, Manipur, and Government of Manipur referred him to SLTRI Karigiri (a specialized centre for leprosy). He was admitted and BI & MI were found to be BI = 0.5+ & MI = 2% respectively.

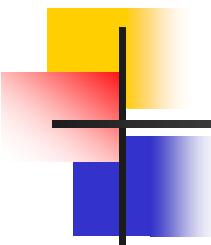
He was advised to stop MDT after 24 BCPs and put on Prednisolone 20 mg for one month which was reduced by 2.5 mg every month along with tablet Chloroquine and capsule Clofazimine (other drugs used for reaction,) by the specialist and was advised to report for follow up at SLTRI, Karigiri after 3 months. After 3 months BI & MI were found to be same i.e. BI = 0.5+ & MI = 2%. The patient is still having lepra reaction.



Discussion points:

- B.I./M.I.
 - How is BI & MI done/read/reported?
 - Where are the facilities available for BI & MI– nearest?
 - Can it be done in more places where AFB microscopy is available?
 - What is the MI report of an untreated newly diagnosed MB patient?
 - How does B.I. & MI change with treatment?
 - What changes earlier, and why?



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- Was M.O. correct to extend therapy? Why? What else could be done?
 - What is the normal expected rate of change of BI after adequate treatment? Why?
 - Who are the patients with high risk of reactivation/relapse?
 - What type of reaction is more common in MB patients? Why?
 - If the patient was managed by chloroquine and clofazimine, along with steroids, at Karigiri, what type of reaction do you think patient was having?
 - What alternative management may have helped the patient?



Answers:

BI & MI

- BI & MI are done through Slit Skin Smear examination, refer B.I./M.I. Annexure
- BI should be less than 2 + or less after completion of treatment
- Facilities for BI & MI are available at District hospitals, medical colleges, NGOs with referral facilities, PMR institutions and can be made available at microscopic centers under RNTCP
- MI of untreated newly diagnosed MB leprosy person is more (70% and above) and declines to 3% - 5% with treatment.
- MI changes faster and earlier than BI. BI may be more even on completion of treatment. Patients with BI >2+ at end of therapy are at higher risk of relapse as compared to those with BI <2+



Answers:

- Yes, Medical officer was right because BI was more than 2+
- With adequate effective treatment BI falls by 1 log/year
- Patients with BI >2+ at end of therapy are at higher risk of relapse as compared to those with BI <2+
- Type 2 (ENL) reactions are seen only in bacilliferous (MB) patients as they have both plenty of bacterial antigen, as well as high titers of anti bodies to M. leprae antigen (non-protective) in their tissues
- Severe Type 2 / (ENL) reactions
- Thalidomide or other immunosuppressive (cytotoxic) drugs are given under expert supervision may have helped the patient by controlling the reaction and reducing side-effect of steroid. BI should be 2 + or less after complication of treatment



Case Study: Diagnosis

Case 6:

13 yrs old female child was brought to health centre. Medical officer PHC found hypo pigmented patch on right hand with partial loss of sensation on skin lesion, no nerve could be palpated and no impairment of nerve function could be found on examination of the nerves. Medical Officers did not prescribe any MDT drug and advised that the child should be followed at frequent intervals.



Discussion points:

- What type of leprosy do you think the child is suffering from? Why?
- How does this form of leprosy evolve?
- How should it be managed?
- How frequently should they be reviewed?
- What advise/counseling should patient/family receive?
- If patient cannot come as frequently for review as desired what can be done?
- What is the outcome that needs to be avoided?
- Would it be better to start MDT in such cases?
- Can MDT prevent evolution of disease?
- Can MDT prevent /reduce permanent nerve damage?



Answers:

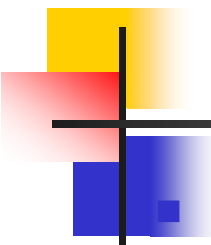
Diagnosis:

- PB leprosy – probably of the indeterminate type (see annexure on Immunological spectrum of leprosy – Ridley & Jopling's): single lesion (Macule), variable/partial sensory loss, no nerve abnormality


Evolution of the Disease:

- This is a early type of clinical leprosy.
- The disease has become clinically detectable in the form of a skin patch with/without sensory loss and no detectable nerve involvement or demonstrable AFB, ordinarily.
- The immune response of the host at this stage is in evolution and has not matured enough to be defined.
- The bacillary load is very low, thus this is a type of PB leprosy.
- Most patients develop effective immune response and overcome/eliminate the infection.
- However, some patients do not acquire an effective immune response and can develop a multi-bacillary disease.



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- Patients should be put on MDT for PB leprosy. In case of doubt, refer person to more experienced person for confirmation of diagnosis.
 - Patients should ideally be followed up monthly - to detect whether their disease is progressing into the MB type of disease: getting multiple nerve involvement, worsening sensory loss and easily detectable bacillary loads.
 - Educate/counsel him that he is suffering from leprosy, which may heal on its own or may get worse, potential damage untreated leprosy can cause, that can be prevented by timely treatment with MDT and must report on earliest sign of nerve involvement.
 - Close monitoring, early detection of nerve involvement and timely intervention can prevent permanent nerve damage.



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- **Alternatively**, Outreach health worker(s)/ sub-centre staff could be trained/oriented to provide follow up assessment at home/sub-centre.
 - **Avoid**, reactions & disability due to nerve damage
 - It is better to start MDT in such cases unless one can follow up the patient very closely
 - MDT can stop evolution of the disease in majority of cases
 - Leprosy can be treated with MDT and timely treatment can prevent permanent damage, good follow up and early detection can lead to timely intervention to prevent permanent nerve damage.



Case Study : Pathogenesis/ Diagnosis

Case 7:

Manoj Kumar, a 18 years old motor mechanic, reported to the medical officer with complaints of, pain in the right elbow, weakness in right hand and a persisting bend in the little finger, of two months duration.

On examination, the medical officer found thickened & tender right ulnar nerve, sensory impairment on ulnar side of right hand and clawing of right little finger.

Apart from these signs, there were two big hypo pigmented patches with four satellite lesions on right arm.

On asking again, Manoj said that he had first noticed the patches one and half year ago, but did not seek any treatment for them.



Discussion points:

- What is the complete diagnosis? Why?
- At what stage has the patient come?
- How can this be changed?
- What is the prognosis for the patient?
- What are occupational implications?
- What action should medical officer take to avoid delayed reporting?
- What counseling should the patient and his family, receive?
- What action you must take at the community level?



Answers:

- Diagnosis: PB Leprosy, Neuritis (Rt. Ulnar), Rt. Claw hand, Grade 2 deformity
- Late presentation
- Increased awareness – IEC
- Good prognosis, less than 6 months duration of neuritis, significant/total reversal can be expected
- Residual weakness will have implications – occupationally, sensory impairment has serious implications due to possible occupational trauma



Answers:

Counsel about

- Potential damage untreated leprosy can cause
- Leprosy has the potential to cause permanent and irreversible deformity and damage but can be treated with MDT and timely treatment can prevent permanent damage
- Importance of regular and complete treatment with MDT and Steroids
- Care of insensitive & weak part of the body
- Procedures of self care



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- Health care workers should be re-oriented/supervised properly about leprosy management

Action at Community Level:

- Plan and implement intensified IEC activities



Case Study: Prevention of Disability (POD)

Case 8:

Mr. Kailash Singh, a 50 years old agriculture labourer, reported slipping of his chappal / footwear from his right foot, while walking, for the past ten days. His old leprosy record indicates that, two years ago, he had completed MB-MDT for 24 months, for the treatment of multiple patches and was regular in taking the treatment.



Discussion points:

- What could be the cause of the complaint (Slipping of chappals) in leprosy patients? What is the patho-mechanism?
- What do you think has happened in this case? What are the possibilities?
- How will you manage this case?
- What is his prognosis?
- How could this have been prevented?



Answers:

Cause in leprosy patients:

- Paralysis of peroneal /ant leg muscles, resulting in inability to dorsi-flex foot and toes
- Neuritis, due to relapse/reactivation of leprosy or delayed reversal reaction, the relatively acute development favours a reactional etiology, however the absence of pain as a symptom is against reaction

Counseling:

- Explain to him that this is a delayed type of damage that occurs because of remaining dead bacilli in the nerve. The disease has actually not recurred. With proper management one can expect a complete recovery.





Management:

- Rest and Dynamic splinting of the affected foot.
 - NSAIDs and corticosteroids in the appropriate doses.
 - Careful and close monitoring for improvement and/or worsening.
 - Early referral to higher appropriate centre, while on steroids/medications, if no recovery seen in 2-3 wks
- **Prognosis** is good, can expect to make complete recovery if treated and followed up correctly.
- Complete prevention, perhaps impossible. But probability could have been minimized by educating patient well, having close follow up after removal from therapy, and careful clinical evaluation at follow up.





Case Study: Reaction & POD

Case 9:

Mr. Karupaiyan, aged 38 years, works as a cook in a hotel. He developed nodules all over the body and pain in both his elbows. He took treatment for these complaints from a local General Practitioner, without much improvement. One day, his friend came to visit him and found it surprising when he observed that Karupaiyan could hold many moderately hot vessels without using any insulator/protection. Karupaiyan told his friend that his ability was because of his long practice of holding hot things but his friend did not agree and asked him to consult a doctor. Karupaiyan therefore consulted the Medical Officer of the nearby health centre.



Discussion points:

- What do you think, is the diagnosis?
- Why do you think the patient did not benefit from the treatment of the local General Practitioner?
- How will you manage this case?
- What specific counseling will you give to this patient?
- What special precautions will you take?



Answers:

Diagnosis: MB leprosy with neuritis and type 2 reaction

- **Not benefitted:** Inappropriate therapy
- **Management:** MB (Adult) MDT, enhanced doses of clofazimine (upto 300 mg/day), Corticosteroids and NSAIDs, rest, splints (neutral position, dynamic), passive movements, galvanic muscle stimulation, counseling & education
- **Counsel:**
 - Recognize muscle/motor weakness, neuritis, and report worsening/increase.
 - Care/protection of hands/feet, particularly occupational trauma, use protective gear while working, final check before going to bed every night.
- **Precautions:**
 - Frequent fortnightly follow up, careful assessment charting/recording of nerve involvement, dose adjustments of drugs to suppress reaction



Case study: Classification & Treatment of leprosy

Case 10:

Nafeesa, 32 years old, diagnosed as PB leprosy, was registered for treatment in December, 2007. She took regular treatment for two months and took accompanied MDT for one month in March, and left for her native village. She came back in the month of June, to collect medicines, and disclosed that she has developed three more lesions now, making it a total of six lesions

Discussion points:

- What are the possible reasons for this development?
- What step(s) will you take to decide/determine the exact/actual cause?
- What step(s) will you take to manage this new development?
- What special precautions may be necessary in the follow up of this case?



Answers:

Reason:

- Poor immune response and/or inadequate treatment
- Developing type1 reaction
- ? Inadequate clinical examination and wrong initial classification of MB as PB
- ??Resistant infection

Action by MO for diagnosis & Management:

- Refer case to referral centre and get patient to follow advice as given by experts, on follow up

Follow up:

- More frequent follow up if it is reaction, to detect neuritis early



Case Study: POD

Case11:

Rahman, 28 years old, an agriculture worker came to the health center requesting medical officer to prescribe some tonic for him as he is developing weakness. On enquiry, he reveals that he feels weakness in his left hand, and, for the past two days, he has noticed that two fingers of his hand (little and ring finger) have become bent (hyper-extended at metacarpo-phalangeal joint and flexed at both the inter-phalangeal joint).

Discussion points:

- What is the most probable diagnosis?
- What do you expect to find by clinical examination of Rahman?
- What urgent step(s) is/are required to prevent permanent disability?
- What is the cause & how can such cases be prevented from occurring in the community?



Answers:

- **Diagnosis:** PB leprosy with early Lt. Ulnar nerve paralysis due to neglect in addressing loss of sensations
- **May find:**
 - Lt Ulnar N thickening/tenderness (? Other nerves)
 - (?5 or less) skin patches
- **Management to prevent permanent disability:**
 - Start Appropriate MDT after careful evaluation
 - Rest and Dynamic splinting of his affected hand.
 - NSAIDS and corticosteroids in the appropriate doses.
 - Careful and close monitoring for improvement and/or worsening.
 - Early referral to higher appropriate centre, while on steroids/medications, if no recovery seen in 2-3 wks
- **Prevention:** Awareness, IEC campaign



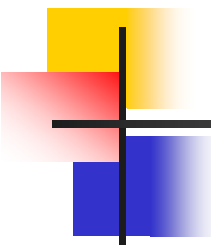
Case Study: Reactions

Case 12:

Devi, a 30 years old woman, noticed a few patches on her leg and arm. She showed it to her husband. He took her to a general practitioner who, after examining the patch, told the patient that it was leprosy. He prescribed Rifampicin 450 mg and Dapsone 100 mg daily for 15 days. Devi complied with the doctor's advice and took the drugs as prescribed. On the 3rd day of treatment, Devi had high temperature. She noticed that the patches have turned an angry red colour and have swollen. Seeing the lesions worsening, she did not go to the treating doctor again.

Instead, she went to another doctor, who gave her some tablets for fever and sent her back. Though Devi's fever subsided, a few more patches appeared on her back. The deteriorating condition of her disease put Devi under mental agony.





A new problem erupted between her husband and Devi. He did not want to live with her any more. He was told by his relatives that Devi's disease could not be cured and, they encouraged him to leave her. Taking this advice, he sent her back to her mother's home.



Discussion points:

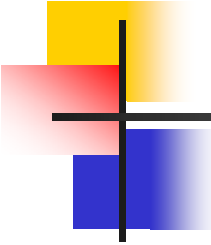
- Was the diagnosis of the general practitioner correct?
- Why do you think the doctor treated Devi in this manner?
- Is the treatment given by the second doctor correct?
- Why do you think he treated Devi like this?
- How can such occurrences be prevented?
- How could Devi's mental agony have been prevented?
- Could Devi's family problem have been prevented?
- What action should be taken now?
- What treatment should Devi receive now?




Answers:

- Yes, Diagnosis of G.P was correct.
- **Why treated like this:** Older physicians are familiar with lifelong dapsona mono-therapy for multibacillary leprosy often feel that single monthly dose of rifampicin, in a one year fixed duration therapy is inadequate treatment for MB leprosy and use unjustified and scientifically unproven modifications. They need to be reoriented to the national programme guidelines.
- **Treatment by second doctor & its cause:** Not correct. The doctor is probably treating symptomatically for fever without realizing that the cause is a type 2 lepra (ENL) reaction.
- Unfamiliarity with leprosy and its various presentations, a fairly common occurrence.



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- **Prevent in future:** CME and IEC activities including refresher and reorientation workshops/symposia.
 - **Prevention of mental agony:** Counseling, confidentiality (from husband) and high degree of awareness (through IEC campaigns in the community) could have prevented Devi's mental agony.
 - **Prevention of family problem:** Yes. Confidential counseling to both patient and spouse, and awareness building (through IEC campaigns in the community) could have prevented Devi's family problem.



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- **Action needed currently:** Multi pronged strategy
 - Specific intervention at home, to relatives, by doctor, health worker, educated peers, panchayat office-bearers, etc.
 - Counseling about fundamental rights (no discrimination due to illness).
 - Intervention by medical, administrative/executive officials and social welfare officials

 - **Management:** Treatment for type 2 (ENL) reaction along with MB-MDT (Adult) with increased doses of clofazimine (100 mg 2-3 times/day). Look for and report at earliest sign of nerve, or other specific organ damage.



Case Study: Reactions

Case 13:

Ram Prasad, 22 years old mechanic came to the health centre with a scarred hypo-pigmented skin lesion on his forehead. On enquiring it was revealed that he had developed this lesion one year back and took treatment from a nearby doctor who had given him medicine for local application saying that medicine will burn out the diseased tissue and thus cure it but there was no effect and a scar developed over it. Now the lesion has become red and swollen

Discussion points:

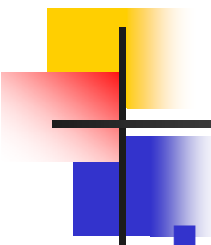
- What is the correct diagnosis?
- What causes leprosy reactions?
- Why do leprosy reactions occur after treatment?
- how would you confirm the diagnosis?
- How should the case be managed?



Answers:

- **Diagnosis:** Type 1 lepra reaction in ?PB leprosy patient
- **Cause:** An abrupt / sudden change in the immune status/response of the patient, causes immune cells (lymphocytes) to rush into the site of infection, where *M.leprae* antigens are plentiful.
- **Why after treatment:** Killing of *M.leprae* by MDT and subsequent rupture/release of dead *M.leprae* and its degenerative debris from the macrophage allows immunological reactions to take place. The lipid rich, antigenic, cell wall of *M.leprae* is not easily broken down by macrophages, even after the bacilli have been killed by MDT. Release of antigen, from the dead *M.leprae* laden macrophages, or enhanced antigen presentation as a result of altered cytokine milieu (due to any cause – like intercurrent infection, etc), could trigger these reactions.





Confirmation of diagnosis:

- Elicitation of a (the) cardinal sign(s) at the time of presentation would have clinched the diagnosis.
- Presence of a cardinal sign or a diagnostic skin biopsy would confirm diagnosis. A clinical assessment will classify patient into appropriate treatment category. Pt should receive appropriate MDT as well as treatment for type 1 lepra reaction.
- **Management & counsel:** Complete course of MDT, monitor for nerve damage due to reaction and report promptly if it occurs, treatment for reaction as prescribed. Residual scar of the treatment can be attended to by cosmetic procedure after leprosy has been adequately treated



Case Study: Reactions during pregnancy

Case 14:

Harvinder Kaur, 38 years old female with 28 weeks of pregnancy was referred by the local dai to medical officer. She was suffering from temperature and had developed tender nodules under the skin over trunk and both the arms and leg. On examination left eye was found red and painful without any other significant finding. Discuss the case.

Discussion points:

- What is the Diagnosis?
- How will you confirm the diagnosis?
- What complication can arise in this case?
- How is her physiological state of pregnancy related with the diagnosis?
- Is this type of presentation typical?
- She is worried about her baby. What will you tell her?
- How should a medical officer manage this case?





Answers:

Diagnosis: Pregnancy with MB leprosy with Type 2 lepra (ENL) reaction, with uveitis.

- **Confirm diagnosis:** Detailed clinical examination, skin slit smear if facilities permit, urgent referral to an ophthalmologist, while starting appropriate (MB-MDT) with increased doses of clofazimine (100 mg three times/day) and corticosteroids.
- **Expected complications:** Impairment of vision and involvement of other nerves?





■ Relation to pregnancy:

- Has developed Type 2 Lepra (ENL) reaction with uveitis.
- Perhaps it has been triggered by the inherent immunological instability that occurs in pregnancy

■ Whether presentation typical to pregnancy:

- Usually reactions are more frequent post partum. Pregnant patients should be counseled to anticipate and be prepared for such a situation.
- Largely yes, after 28 wks gestation most organogenesis/differentiation is complete (However, she should receive as low corticosteroid doses as is feasible).

- **About baby:** Babies in such a situation can be born preterm or can be small for dates (underweight). However, with close follow up and specialized gynecologic care she can expect a normal child.





- **Management:**

- The Medical officer should refer the patient immediately to both an obstetrician as well as an ophthalmologist to
- Determine both fetal well being as well as status of eye by slit lamp and other examination.
- MB-MDT drugs with higher doses of clofazimine, as well as steroids as indicated must be started early.

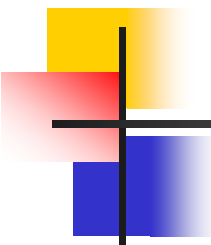


Case Study: Reactions

Case 15:

Kamala, 35 years old female noticed few nodules on her arms and thought it to be mosquito bite. When similar nodules appeared on the thighs two days later she got worried. She confided in her husband. They decided to consult a skin specialist. They went to a well known dermatologist who had retired from services, long time back. He suggested biopsy. The report was found negative for leprosy. The dermatologist was not happy with the report. He referred Kamala to a former colleague of his who had also retired form service. He took smears form the ear lobes, thighs and arms. It was found to be 5+. He put her on a regimen of daily Rifampicin (600 mg) and Dapsone 100 mg. The condition became worse. She developed new painful lesions all over with high fever and joint pains.





The couple became scared. They went to a dermatologist in a well – known corporate hospital. He started Clofazimine 300 mg a day and prednisolone 40 mg a day in addition to her previous treatment. There was improvement for sometime. When the prednisolone was reduced to 20 mg new lesions appeared. She had such exacerbation about thrice after that. She was referred to leprosy centre

The patient was anxious. She had developed cushingoid features. She was febrile. She had reddish-brown pigmentation of the skin. She had painful, tender nodules on the neck, arms, thighs and legs. Nerves appeared to be normal. There was no deformity.



Discussion points:

- What lessons do we learn from the history of the patient?
- Why was this unusual types of treatment started?
- Why did the patient's condition worsen?
- What is the condition that she is suffering now?
- Why is her skin reddish brown?
- How should the patient be managed now?
- Can you name some other drugs that may be useful in her condition that can be given at referral centers?
- How will you counsel her?

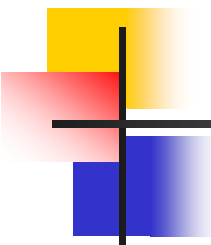


Answers:

Lesson learnt: Leprosy is still a poorly understood disease by a large majority of our doctors whether clinician or a laboratory professional. Some specialists (dermatologists, leprologists) on the other hand may have a vast body of experience in the management of this disease.

- **Why unusual type of treatment:** Older practitioners (from pre-MDT era) are not fully convinced/conversant about the efficacy of MDT and tend to modify treatment as per their own belief and not as per the national programme guidelines.
- **Cause of worsening of condition:** Killing of *M. leprae* and release of antigen which combined with antibodies (non protective) to precipitate in the tissues as immune complexes. Clofazimine has anti-reactional therapeutic effect apart from its anti *M. leprae* role, but surprisingly, was not started (? Fear of pigmentation)



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- **Diagnosis:** Chronic ENL reaction and iatrogenic Cushing(oid)'s
 - **Brown discolouration of the skin:** Due to deposition of clofazimine in the dermis and subcutis.
 - **Management now:** Alternative steroid sparing agents must be tried, Thalidomide, Clofazimine, azathioprine etc.
 - **Other drugs:** Thalidomide, azathioprine, Cyclophosphomide, Chlorambucil, Mycophenolate mofetyl, leflunomide, tacrolimus





- **Counsel:**

- Cause of the problem
- Regularity of medication
- Regularity of follow up
- Regularity of laboratory tests
- Look for S/S of nerve damage, eye damage
- Report promptly in case any physical / symptomatic worsening



Case Studies: Reactions/POD

Case 16:

Santi, 42 years old female came to the health worker and requested her to write some good ointment for healing of a wound. On examination, it was found that she had an ulcer on the hypo-thenar eminence of left hand. Ulnar nerve was thickened and muscle weakness was obvious in left hand. On exploration it was revealed that such wound appears repeatedly, especially after working on chara (manual grass cutting machine for cattle feed) machine. On examining the hand it was found that her ring finger and little fingers are bent. She has told the worker that it has been like this for four months, since her fall from the steps. HW referred the person to the doctor who found left ulnar nerve thickened and sensory loss on the medial 1/3 of the palm.



Discussion points:

- What deformity is the patient suffering from?
- What clinical assessment can you use to check for nerve function in this patient?
- How will you manage this case?
- What all has contributed to the occurrence of this type of a case?



Answers:

- **Deformity:** Lt. Ulnar claw hand with grade 2 disability (ulcer on hypothenar eminence)
- **Clinical assessment:** ST & VMT (little finger out test) See Tests for ulnar palsy/clawing
- **Management:** The case should be referred to dermatologist/orthopedic surgeon, to rule out traumatic ulnar nerve damage and confirm leprosy
- **Cause of occurrence:** Ignorance, poor health seeking behavior, lack of knowledge/ IEC to community, lack of precautions and self care



Case Study: Reactions/ POD

Case 17:

Suru, 18 years old female, registered for MB leprosy, came to the health centre with complaint of redness & pain in the right eye along with deterioration of vision. On detailed evaluation and history taking, history of appearance of tender nodules on both the arms 15 days back was extracted.

Discussion points:

- What is your diagnosis?
- Why does it occur?
- What other complications can arise in this patient?
- How will you manage this case?



Answers:

- **Diagnosis:** ENL with uveitis
- **Cause:** Type 2 Gell and Coombs' Hypersensitivity – Immune complex deposition in inflamed tissues activate complement and inflammatory cascade. Immune complexes are formed when sudden increase in mycobacterial antigen release occurs and these combine with antibodies already circulating in the tissues/ system.





Other complications:

- Hepato-splenomegaly, cholestatic jaundice
 - Bone marrow hyper-proliferation, bony tenderness
 - Generalized lymphadenopathy
 - Glomerulonephritis
 - Neuritis
 - Uveitis
 - Epididymo-orchitis
 - Endocarditis
 - Arthritis
-
- Management: MB-MDT with higher doses of clofazimine, corticosteroids, NSAIDs, etc., Urgent referral to ophthalmologist.





Case 18:

Mr. Haribhau Hatkar, 52-years old, had developed tingling sensation in the right leg about 6 months back. He went to a local practitioner, who assured him that it was not serious. He was prescribed some B complex. He became worried when a blister appeared on the underside of his right big toe and went to a reputed medical college hospital on advice of his son's friend, a soldier. He consulted the neurologist, subjected to various investigations, pronounced normal and prescribed injections of B. complex.

About 6 weeks later he found that his right foot was not holding on to the Chappal and it was slipping out of his feet easily. He met a friend who noticed multiple skin patches and brought him for advice to health centre.



Discussion points:

- Why did the slipping of chappals develop in this case?
- How can you confirm your diagnosis – investigation?
- What local complication may develop in the leg if he is left untreated?
- How would you manage trophic ulcer?
- What advice will you give him to prevent further occurrence of trophic ulcers?
- What steps can you take to prevent such delayed detection and treatment in your area?



Answers:

Cause of slipping of chappal: Loss of foot dorsi-flexion / eversion rhythm due to weakness/paralysis of muscles supplied by common peroneal nerve

- **Confirm diagnosis:** Slit skin smear for AFB, skin biopsy from lesion(s) for histopathology, nerve biopsy for histopathology, tests for (incipient) foot drop
- **Complications:** Foot drop, plantar ulcer/injuries
- **Manage tropical ulcer:** Rest, dressings, foot-elevation, appropriate footwear, ...
- **Prevention of ulcer:** Wear appropriate footwear (with dynamic splint), self-care of feet, full course of MDT, cortico-steroids

Prevention of delayed reporting: IEC, camps, etc.



Case Studies: IEC

Case 19:

A treated case of MB leprosy visits health centre with the complaints that hypo pigmented patches are not disappearing and he is still, unable to feel hot or cold by his affected hand, unable to hold things with the same hand and, is anxious to know whether he is actually cured of the disease. How will you convince the patient that disease has been cured?

Discussion points:

- What is the evolution of skin lesions with treatment? (?hypopigmented, ?erythematous lesions)
- What happens to sensations and nerve function following treatment?
- What can a patient with advanced and complicated leprosy expect from a cure?



Answers:

- **Evolution of skin lesions:** Recovery over time (upto several months)
- **Recovery of Loss of sensation:** Fresh loss usually recovers. Long standing loss may not recover completely.
- **Cure of advanced disability:** Persisting deformity/disability which may require special rehabilitation measures/surgery



Case Studies: POD

Case 20:(Role Play) -

Counselling a case for better patient compliance and self-care as per given structured script of role play-

Discussion points after role play-

- What is the problem of Hari Ram?
- Since how long the problem existed?
- Why did this problem occur?
- What possible alternatives or options can be made available?
- What is counseling and how it is done?



Answers:

- **Problem:** Recurrent planter Ulcer
- **Cause:** Excessive use of the foot
- **Alternatives:** Hand operated/ electrically operated machine/
use other foot/ swapping jobs
- **Counseling:** SSO, selfcare and above mentioned points



Case Study: Planning Exercise

Group exercises:

- Prepare an action plan for training of paramedical workers of a PHC
- Prepare an action plan for DPMR services for PHC
- Prepare an action plan for IEC activities for a PHC
- Prepare an action plan for supervision & monitoring of leprosy programme in your PHC area



Case study: Monitoring exercise

Case 21:

In a Block PHC X having population of 100000, while analyzing NLEP indicators of last 5 years it was found that NCDR has come down from 89 per to 10 per 100000 population but MB proportion has gone up from 25% to 60% and Disability Gr-2 proportion has gone up from 3% to 10%.

Discussion points:

How is MO PHC going to explain NLEP situation of his block in review meeting?



Answer:

As the load of the disease declines in an area, NCDR declines over time as less of the new cases appear, but disease has a long incubation period and cases with pure nerve involvement may present late as they are difficult to diagnose and may present with grade 2 disability.



Case Study: Monitoring exercise

Case 22:

MPW of sub-centre X has gone on maternity leave and a new health worker has joined in her place. Medical officer of a PHC noticed that within two months there has been a sudden increase in the reporting of the leprosy affected persons with grade 2 disability from the area covered by that sub-centre.

Discussion points:

- **How would you manage the situation?** Outline a plan and its implementation time line.



Case Study: Monitoring exercise

Case 23: During a meeting you received the following data from the two sub-centers:

	Sub-centre A	Sub-centre B
Total new cases registered	12	5
PB cases	9	1
MB cases	3	4
Children < 10 years	0	2
New cases with grade 2 deformity	0	3

Discussion points:

- Which sub-centre is doing better? Why?
- Outline steps for improving function of the other centre. Identify indicators. Create a time line.



Answers:

- Health worker of sub-centre A is probably doing better as more cases are detected, cases are detected early, leading to less of active transmission of disease, and less of grade2 disability
- Close monitoring and supervision required for sub- centre B. exclude re- registration of cases, find health seeking behaviour of the two community
- Plan and implement intense IEC activities in the area for three months
- Arrange for active search if needed after three months
- Find the problem and arrange for training of the worker accordingly.



Answers:

- Tell the indicators and what do they interpret.
- Useful Indicators are:
 - Newly detected cases,
 - Proportion of children among newly detected cases.
 - Grade 2 disability among newly detected cases.



Case Study: Supervision

Case Study 24:

District Leprosy Officer examined the records & reports from PHC X and observed that the number of defaulters and wrong diagnoses are more than the district average and found the data of the report inconsistent. He decided to send supervisor to improve the situation.

Discussion & Group Work

- What are the points to be supervised and how?



Answer:

Observe & discuss during supervisory visits:

- While MO is examining the suspected patients to confirm diagnosis
- Able to elicit sensation in the skin correctly
- Palpate nerves correctly
- ST and VMT of nerves
- Ask what type of problems do they face
- What is the referral criteria to confirm diagnosis
- Observe the behaviour of the staff with patients





Observe & discuss during supervisory visits:

- Observe while they counsel the patient
- Ask how do they find that PAL has not come to collect medicine
- What action do they take
- Discuss freely the problems encountered by them in their routine work
- Check the records for full address of the patients, number of defaulters, action taken and persons retrieved
- Talk to the defaulters, their perception about the quality of care, problems encountered by them

