ANTILEPROTIC DRUGS

Leprosy caused by Mycobacterium leprae, has been considered incurable Due to availability of effective antileprotic drugs now, it is entirely curable, but deformities/ defects already incurred may not reverse.

CLASSIFICATION

Sulfone:Dapsone (DDS)

Phenazine derivative Clofazimine

Antitubercular drugs Rifampin, Ethionamide

Other antibiotics :Ofloxacin, Minocycline,, Clarithromycin

Dapsone (DDS)

It is diamino diphenyl sulfone (DDS), the simplest, oldest, cheapest, most active and most commonly used member of its class.

DAPSONE

Activity and mechanism Dapsone is chemically related to sulfonamides and has the same mechanism of action, *i.e. inhibition of PABA incorporation into folic acid*; its antibacterial action is antagonized by PABA It is leprostatic at low concentrations, and at relatively higher concentrations arrests the growth of many other bacteria sensitive to sulfonamides. Specificity for M. leprae may be due to difference in the affinity of its folate synthase.

Clofazimine (Cio)

It is a dye with leprostatic and anti-inflammatory properties; acts probably by interfering with template function of DNA in M. leprae. When used alone, resistance to clofazimine develops in 1-3 years. Dapsone-resistant M. leprae respond to clofazimine, but apparently after a lag period of about 2 months. Clofazimine is orally active (40-70% absorbed). It accumulates in many tissues, especially in fat, in crystalline form. However, entry in CSF is poor. The t half is 70 days so that intermittent therapy is possible

Two polar types-lepromatous (LL) and tuberculoid (TT) with 4 intermediate formsborderline (BB), borderline lepromatous (BL),

Tuberculoid leprosy	Lepromatous leprosy
Anaesthetic patch	Diffuse skin and mucous membrane infiltration, nodules
Cell mediated immunity (CMI) is normal	CMI is absent
Lepromin test—positive	Lepromin test—negative
Bacilli rarely found in biopsies	Skin and mucous membrane lesions teeming with bacilli
Prolonged remissions with periodic exacerbations	Progresses to anaesthesia of distal parts, atrophy, ulceration, absorption of digits, etc.

For operational purposes, leprosy has been divided into:

Paucibacil/ary leprosy (PBL) (Non-infectious): This includes TT, BT, I and polyneuritic.

Multibacillary leprosy (MBL) (Infectious): This includes LL, BL and BB

Multidrug therapy (MDT) of leprosy

	Multibacillary	Paucibacillary
Rifampin	600 mg once a month supervised	600 mg once a month supervised
Dapsone	100 mg daily self administered	100 mg daily self administered
Clofazimine	300 mg once a month supervised	—
	50 mg daily self administered	—
Duration	12 months	6 months

Doses to be reduced suitably for children.

Reactions in leprosy

Lepra reaction These occur in LL, usually with institution of chemotherapy and/ or intercurrent infection. It is a Jarish Herxheimer (Arthus) type of reaction due to release of antigens from the killed bacilli. It may be mild, severe or lifethreatening (erythema nodosum leprosum).

Sulfone syndrome It is the reaction which develops 4-6 weeks after dapsone treatment: consists of fever, malaise, lymph node enlargement, desquamation of skin, jaundice and anaemia. It is generally seen in malnourished patients. Lepra reaction is of abrupt onset; existing lesions enlarge, become red, swollen and painful; several new lesions may appear. Malaise, fever and other constitutional symptoms generally accompany and may be marked. Temporary discontinuation of dapsone is recommended only in severe cases. Clofazimine (200 mg daily) is highly effective in controlling the reaction (except the most severe one), probably because of its antiinflammatory property.

Reversal reaction:This is seen in TT -is a manifestation of delayed hypersensitivity to M leprae antigens. Cutaneous ulceration, multiple nerve involvement with pain and tenderness occur suddenly even after completion of therapy. It is treated with clofazimine or corticosteroids.