

TRIAL OF ISONICOTINYLDRAZONE OF  
2-CARBOXYMETHOXYBENZALDEHYDE (COMPOUND 377) IN  
THE TREATMENT OF LEPROSY  
PRELIMINARY REPORT

N. MUKERJEE, M.B.B.S., D.T.M., D.P.H. (Calcutta)

*Officer-in-Charge*

AND S. GHOSH, M.B.B.S., D.T.M. (Calcutta), D. Bact. Fds. (London)

*Assistant Professor*

*Leprosy Research Department, School of Tropical Medicine  
Calcutta, India*

Chang (1) demonstrated that the isonicotinylhydrazone of 2-carboxymethoxybenzaldehyde (Compound 377) is effective in experimental rat leprosy. It has also been observed to be the first compound to hold infection in check in the majority of the animals for as long as 15 months. The whole molecule of Compound 377, or its degradation product(s) other than isoniazid, are responsible for its long-lasting activity. Based on these findings, the clinical trial of the compound in human leprosy was carried out. Until now there is no available report of therapeutic activity of this drug in leprosy.

MATERIAL AND METHODS

Compound 377 was kindly manufactured and supplied by Albert David Ltd., Calcutta, in response to our request. It was prepared in the form of tablets, 50 mgm. each.

Eight strongly positive, lepromin-negative lepromatous cases were selected for this trial, and they were given the treatment for about 15 months. None of these patients had previously had any form of antileprosy treatment. The lesions were active and generalized. Only in 1 case were polyneuritic signs present. Detailed clinical, bacteriologic, and hematologic examinations were made periodically.

To start with, 25 mgm. of the drug was given per day, orally in divided doses; later the dose was gradually increased up to 200 mgm. daily with the omission of one day a week.

Biochemical estimation of the drug was attempted, but 2-carboxymethoxybenzaldehyde or its derivatives were not demonstrable in the body fluids by any known method. We did not try to detect the blood isoniazide, as it is thought that the active principle of the drug is either the whole molecule or its degradation product(s).

RESULTS

Details of the results of treatment during this short period are given in Table 1. Clinical improvement was well-marked in all cases. The patients were so satisfied that they believed the disease to be cured; they looked like normal persons. The nodules subsided to such an extent that they became depressed. The thick, erythematous patches subsided considerably and became flat and hypopigmented. Infiltrations also subsided. A trophic ulcer in one case healed completely, and until now has not reappeared. The anesthesia which was found in a few cases was, however, not altered in any way. Bacteriologically there was

much improvement; the bacterial index was lowered, but none of the patients became negative during this 15 months trial.

TABLE 1.—Showing the results of treatment of 8 lepromin-negative lepromatous cases with Compound 377.

Case	Type	Bacterial index		Clinical improvement
		Initial	Present	
1. N.J.	L2P1	2.5	1.7	The lesions subsided considerably. The thickened red patch became flat. Deformity and anesthesia not improved.
2. D.R.	L2-3	3	1.5	The general appearance much improved. The infiltration subsided completely. Nodules also subsided, so that their bases became depressed.
3. H.C.M.	L2	3.5	2.0	The skin lesions subsided appreciably.
4. S.L.M.	L2	2.5	1.5	Improvement observed, both clinically and bacteriologically.
5. R.A.	L2	3.7	1.7	The lesions subsided considerably.
6. A.J.	L2-3	3.2	1.8	The nodules became flat, with scar marks at their bases. Other skin lesions also subsided.
7. R.G.S.	L2-3	4	2.1	The thick erythematous lesions became flat. Infiltration subsided.
8. M.F.	L2	3.1	1.7	Clinical improvement was demonstrable, but anesthesia did not disappear.

No toxic symptoms or signs were observed in any case. There were almost no changes in the blood pictures. Urine examinations did not reveal any abnormality.

From the result of this short trial, it can be concluded that the drug is effective in leprosy.

#### SUMMARY

Eight lepromatous cases treated for 15 months with Compound 377 all showed both clinical and bacteriologic improvement.

#### REFERENCE

1. CHANG, Y. T. Chemotherapy of murine leprosy. VI. The effects of isonicotinyldihydrazone of 2-carboxymethoxy-3-methoxybenzaldehyde (Compound 373) and isonicotinyldihydrazone of 2-carboxymethoxybenzaldehyde (Compound 377) on mouse leprosy. *Internat. J. Leprosy* **25** (1957) 130-146.