RIFAMPICIN (RIMACTANE) IN ACUTE GONORRHOEA

P. S. RANGANATHAN AND M. P. BALASUBRAMANIAM

Summary

The need for alternate antibiotics, in view of the increasing incidence of penicillin and other antibiotic resistance in gonorrhoea, is stressed. 48 male patients and one female patient who attended the V. D. Department, Govt. Erskine Hospital, Madurai, during the year 1970, with acute uncomplicated gonorrhoea were treated with single doses of 900 mgms. of rifampicin (Rimactane-Ciba). The drug was tolerated well and there were no side-effects. Of the 42 patients, who were followed up after treatment, 36 were considered cured, while 5 patients failed to respond and one had a reinfection. The cure-rate of 87.8% in this series compares favourably with other reports with Rimactane. Rifampicin has an advantage over other antibiotics, in the treatment of gonorrhoea, in that, it is inactive against spirochaetes in the doses employed and does not mask co-existing early syphilis.

Decreased sensitivity of gonococcus to penicillin has led to the necessity of using higher and higher doses of the antibiotic to achieve single-injection cure-rates in gonorrhoea. Reports from various parts of the world reveal an increasing tendency for steep rise in the Minimal Inhibitory Concentrations (M I C) of many strains of gonococci and several of them require more than 0.50 oxford units per ml (original level from 0.003 to 0.03 units/ml) for inhibition of growth.[1] In some places the limits of 'single-session' penicillin therapy have, now, been reached, because of the unacceptable bulk of the injection[2]. A similar trend of increased dose requirements has been reported in respect to broad-spectrum antibiotics like tetracycline and erythromycin, in gonorrhoea. It is against such a background, that a new, potent and safe antibiotic like rifampicin is welcome and worthy of trial.

Department of Venereal Diseases,
Madurai Medical College, Madurai 625020
Received for Publication on 20—6—1973

Rifampicin is one of the rifamycins produced by Streptomyces mediterranei. While other rifamycins are active mainly against Gram-positive organisms and only by the parenteral route, rifampicin has a decided advantage in being active against both Gram-positive and Gram-negative organisms and fully effective when administered orally[3]. It is effective against N. Gonorroea and free from side-effects in the doses employed. It has no effect on spirochaetes and does not mask signs of co-existing early syphilis.[4 5 6].

Rifampicin acts by inhibiting bacterial RNA synthesis of the DNA templates. ie., it stops the expression of genes without any effect on the synthesis of genes without any effect on the synthesis of RNA in mammalian cells.[7]

The following report relates to a trial of rifampicin (Rimactane–Ciba) in uncomplicated acute gonorrhoea, given as a single oral dose. The single-session therapy was employed, in view of its obvious advantages.

Material and Methods

48 male patients and one female patient attending the V. D. Department of the Government Erskine Hospital, Madurai, during the year 1970, were included in the trial. The diagnosis was established by isolating the gonococci in the Gram-stained urethral smears in the males and cervical smear, in the female. Culture for gonococcus was not done, in any of the cases.

Routine clinical examination for other associated Venereal disease, particularly syphilis and the STS were done. Rimactane was administered orally in a single dose of 900 mg (6 cap of 150 mg each) under our supervision. The drug was given mostly between 8.30 A.M. and 11 A.M. and most of our patients usually have their breakfast before attending the Hospital.

Other details of the trial are given below.

Age

The age of the patients ranged between 17 and 42 years with an average of 25.6 years.

Marital Status

16 of the 49 patients including the woman patient were married. The spouses of married patients were examined and treated for gonorrhoea with epidemiologic doses of other antibiotics. The woman patient and her husband were treated with Rimactane. *Duration of the discharge* before treatment varied from 3 to 30 days with a mean of 9.26 days.

Treatment Taken

Nine of the patients received treatment with other antibiotics before the trial. 4 of them were treatment-failures with single-dose injections of 1.2 μ of procaine penicillin.

Associated V.D.

Three patients had a reactive STS, before commencement of the trial. One patient developed a typical chancre, 23 days after Rimactane, which was dark-field negative. His blood was reactive to STS and the patient admitted a subsequent exposure. Another patient had secondary syphilis with a highly reactive VDRL, 47 days later. The latter denied having had subsequent exposure.

One patient had an associated inguinal bubo due to L.G.V., while none of the patients had non-specific urethritis during the period of surveillance.

Progress and Follow up

Patients were instructed to report daily for 4 days and thereafter on the 7th, 14th, 30th and 90th day after therapy. Examination for the presence of urethral discharge, urinary haze or threads was done during each visit. Prostatic massage was done when indicated and the fluid examined for evidence of persistent infection.

Blood V. D. R. L. test was repeated, usually at the end of 14, 30 and 90 days.

Response to Therapy

All the patients tolerated the drug well and there were no side-effects, except passing red-coloured urine, which caused alarm in one patient.

Not all the patients reported for follow-up as directed. 42 patients attended the clinic, subsequent to treatment for periods varying from 4 to 90 days, while 7 were lost to follow-up.

In the 36 cases, who responded well to rifampicin, the symptoms and discharge disappeared in 1 to 12 days, with a mean of 2.27 days. Further details of the response to therapy are given in the Table. One patient admit-

TABLE

Length of Follow-up	Cases followed	RESULTS			
		Satisfactory	Re-infection	N. S. U.	Failure
0	49	—	—	—	—
1 — 4 days	42	11	—	—	3
5 — 7 days	28	5	—	—	2
8 — 14 days	21	3	1	—	—
15 — 30 days	17	5	—	—	—
1 — 3 months	12	12	—	—	—
	42	36	1	—	5

ted reinfection, while five were treatment failures. All the five treatment failures were cured by single-dose injections of 1.2 μ of procaine pencillin.

Conclusions

Of the 42 patients who were followed up, one had a reinfection. Among the rest, 36 were cured and 5 failed to respond to rifampicin. The failure-rate of 12.2% compares well with the 11.2% failures in a series of 103 cases reported by Willcox et al[8] and 6.7% failures, in 30 cases of Yawalkar et al[9]. The single dose therapy with rifampicin showed better results than similar single session oral trials with Spiramycin reported by Willcox[10] (27.2% failure rate) and Bhargava[11] (5 failures of 23 treated.)

Cross-resistance between rifampicin and other antibiotics was not noticed in this series. While nine patients, who failed to respond to penicillin and other antibiotics were cured by rifampicin, all the five cases of rifampicin-failure responded to single-dose injections of 1.2 μ of procaine penicillin.

One patient who had no clinical evidence of syphilis before the trial, reported with secondary syphilis about 7 weeks later.

Acknowledgment

Our thanks are due to Dr. S. A. Kabir, Dean, Govt. Erskine Hospital, Madurai for permission to make use of the Hospital records and to Dr. A.K. Gupta and Mr. Parameswaran of Ciba (India) Ltd., for the supply of Rimactane, for the trial.

REFERENCES

1. Frederick Sparling P: Antibiotic Resistance in Neisseria Gonorrhoeae. M Clin North America 50: 1134, 1972.
2. WHO (1969): Report of Western Pacific Regional Seminar on VD control, Manila Phillippines-December, 1968.
3. CIBA-Information on Rimactane (Rifampicin), Orally active broad-spectrum antibiotic, 1968 p 1.
4. Ciaula V and Rantuccio F: Observazioni Sulla therapia dell infezioni gonococcica recente acuta con rifampicina. Rass Derm Sif (It) 21: 6, 1968.
5. Sanchez Sanudo L, Ricart JM and Perle E: Tratamiento de la gonorrhoea con rifampicina. Dia med (Arg) 41: 952, 1969.
6. Fuga GC and Gentile G: Resultats due traitement des gonococcies avec le Rimactan. Symposium on Rimactane, Basle, 1968 p 78.
7. Nature (Lond): "News and Views" New Antiviral Drug 222; 218: 1969.
8. Willcox RR, Morrison GD and Cobbold RJC: Rifampicin in gonorrhoea. Brit J Vener Dis 46: 145, 1970.
9. Yawalkar SJ, Kuchbal DS and Mardhekar BV: Rimactane in acute gonococcal urethritis. Ind J Derm Vener 36: 224, 1970.
10. Willcox RR: Treatment of gonorrhoea with Spiramycin, Brit J Vener Dis 32: 117, 1956.
11. Bhargava NC: One dose treatment of acute gonorrhoea with spiramycin (Rovamycin). Ind J Derm Vener 38: 272, 1972.