

LISTERIOSIS—A CLINICAL AND BACTERIOLOGICAL STUDY

by

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Listeria monocytogenes was first discovered in 1925 by Murray and his colleagues. Although this organism is quite widespread amongst animals and men, its serious clinical implications have been only recently recognized.

A chronic infection with this organism may lead to abortions, still-births or even neonatal deaths. Hence the importance of recognizing the disease.

Material and Method:

Whilst investigating the aetiology of cases with bad obstetric history. Listeriosis was looked for as a causative factor in 150 cases. A complete clinical and bacteriological record was maintained in all positive cases and suitable treatment given in all cases. The results of therapy were investigated on the basis of clinical and bacteriological follow up.

The data collected during the period of study are presented.

Results:

Bacteriological studies: As a screening procedure to detect lis-

"Paper read at the 13th All-India Obstetric & Gynaecological Congress held at Patna in January 1966".

teriosis, a cervical swab from all cases of bad obstetric history were cultured on a special medium, and a serological test was also performed to detect presence of antibodies. In all listeria positive cases, further examination was undertaken on urine and blood.

Husband's semen cultures were also performed in all infected cases.

Morphology: *Listeria monocytogenes* are short gram-positive, non-capsulated non-sporing cocco-bacillus measuring 0.5 x 1-2 u, seen singly in chains or V shaped arrangements.

They are cultured on tryptose agar medium at 37°C and the colonies appear in 18-24 hours as smooth, rounded, bluish-green growths of 0.2-0.3 mm. diameter.

Intraperitoneal injections in pregnant rabbits and mice lead to abortions, still-births and septicaemic manifestations.

Listeriosis in pregnancy:

Genital tract infection may affect the products of conception and pass unnoticed. Detection and eradication of infection would considerably improve foetal salvage.

Incidence of listeriosis:

Of the 150 cases of bad obstetric

history investigated for Listeriosis, it was found to be present in 34 cases giving an incidence of 22.6%.

Positive cases were so labelled because a positive culture was obtained or their serum showed an antibody titre of more than 1:40. In a considerable number of cases both the tests were positive.

Total cases investigated	..	150
Total cases of listeriosis	..	34
Total cases with culture positive	..	21
Total cases with immunological test positive	..	26
Total cases with both tests positive	..	13

Patients with recent abortion and with vaginal discharge tend to show positive cultures more often. Pregnant women with past histories of abortions tend to show the immunological test positive more often.

A similar investigation was performed in 50 patients with a normal past obstetric history. Cultures were negative in all cases and immunological test was positive with 1:40 titre in only one case, emphasising the importance of listeriosis in cases with bad obstetric history.

Other laboratory investigations:

1. *Leucocyte count*: In positive cases the total white blood cells ranged from 7,000 per cmm. to 12,000 per cmm. with an average value of 9,500 per cmm. showing that listeriosis is not often accompanied by leucocytosis. The differential count did not reveal any unusual features. The monocytosis so evident

in rabbits was conspicuous by its absence in human beings.

2. *Urinanalysis*: No significant findings were obtained.

3. *Husband's semen cultures*: These were negative in all cases showing that the wife does not infect her husband.

Physical examination: There are varied clinical manifestations of listeriosis. In pregnant women, the common symptoms include—

1. *Fever*: 48% of the patients complained of fever. The fever is usually low, around 99°F and commonly accompanied by malaise. It precedes the abortion by 1-2 days and continues after the abortion for 3-4 days.

Vaginal discharge and dysuria are common accompaniments.

2. *Malaise*: This is mild, not very disabling and accompanies the fever, but often it may be present without pyrexia.

3. *Vaginal discharge*: 80% of the cases complained of yellowish viscid, at times sanguinous discharge, which precedes and follows abortion.

4. *Dysuria*: 80% of the cases complained of frequency and burning micturition, before and after an abortion.

5. *Second trimester abortions*: These patients often abort in the second trimester of pregnancy. The foetus often appears macerated. Amniotic fluid is tinged with blood.

Most of our patients were para III or para IV and 82% of them aborted in the second trimester.

Treatment:

The patients were treated with

either one of the following two regimes:—

Regime 1: Inj. Crystalline penicillin 10 lac units daily for 14 days followed by sulphamethoxyipyridazine (Lederkyn) 1 daily for 14 days.

Thirteen cases who had already aborted, were thus treated. All these patients were culture negative three weeks after treatment. Five of these women have conceived again and are continuing pregnancy uneventfully.

Three women in the first trimester of pregnancy were successfully treated with the penicillin sulfa regime, and all have delivered at term; one baby died of cord prolapse.

Regime 2: Capsule Oxytetracycline (Terramycin) 250 mg. every 6 hours for 7 days. (Fig. 1)

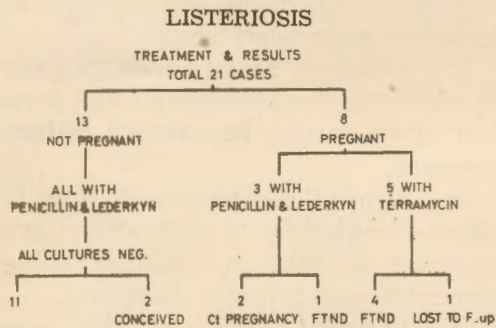


Fig. 1

Five women in advanced pregnancy were put on this regime.

All the women were culture negative after two weeks of therapy.

Four of these women delivered at term and one is lost to follow up.

Conclusions:

(1) Listeriosis was found to be an offending factor in 22.6% of patients with bad obstetric history.

(2) It is best detected by culture

and immunological tests combined.

(3) It can be satisfactorily treated with penicillin and sulfa therapy as well as with broad spectrum antibiotics.

Acknowledgement:

Our thanks are due to Dr. S. V. Joglekar and Dr. K. M. Masani for inclusion of cases from K.E.M. Hospital and Nowrosjee Wadia Maternity Hospital, Bombay.

Thanks are also due to Dr. B. N. Purandare and Dr. V. N. Purandare for their constant encouragement.

We thank Dr. S. N. Daftary for his help in preparation of this paper.

Lastly we thank Messrs. Lederle Pharmaceuticals, Messrs. Pfizer Ltd. and Hoechst Pharmaceutical Ltd. for supply of drugs used in the present study.

References

1. Desai, M. W., Daftary, V. G. et al.: J. Obst. & Gynec. India. 13: 455, 1963.
2. Gray, M. L., Seelinger, H. P. R. and Potel, J.: Clinical Pediatrics. 2: 614, 1963.
3. Gray, M. L., Singh, C. H. and Thorp, F. J.: Proceedings of the Society of Experimental Biology and Medicine. 89: 163, 1955.
4. Murray, E. G. D., Webb, R. A. and Swann, M. B. R.: J. Path. & Bact. 29: 407, 1926.
5. Rappaport, F., Rabinovitz, M., Toaff, R. and Krochi, K. N.: Lancet. 1: 1273, 1960.
6. Rost, H. F., Paul, H. and Seelinger, H. P. R.: German Medical J. 4: 124, 1959.
7. Seelinger, H. P. R.: Listeriosis, ed. 2, 1961, p. 4.