LINCOMYCIN THERAPY IN OBSTETRICS AND GYNAECOLOGY

(Clinical Experience with 30 Patients)

by

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Introduction

Lincomycin a relatively new antibiotic, is produced by *Streptomyces lincolnensis*, and was first isolated in 1955 (Geddes). It has the comparable activity in vitro against the same range of gram-positive organisms as Erythromycin. It does not share antigenicity with penicillin compounds and as such it can be safely given to the persons allergic to penicillins. It can be called a narrow spectrum drug as it is effective against gram-positive bacteria only with certain exceptions. A lack of cross resistance with other antibiotics such as penicillin, erythromycin, triacetyloleandomycin, novobiocin, tetracyclines, streptomycin, chloramphenicol, has been reported. Staphylococci develop resistance to this drug in a slow stepwise manner.

The metabolism of lincomycin in normal individuals has been well established. No case of irreversible hematologic toxicity has been reported. However, an extreme caution should be exercised in patients with primary hepatic diseases and apparent renal functional impairment, while putting them on lincomycin therapy. The drug is not indicated in the treatment of viral infections, and is not indicated in new-born, till further clinical experience is obtained. Although experience with 354 women having the drug during various stages of pregnancy revealed no ill effects in mother or foetus, the safety of the drug for use in pregnancy has not yet been established. Lincomycin has been clinically used and studied by a number of physicians with exceptionally good results. (Geddes, *et al* 1964; Holloway and Scott, 1965; Shah, *et al* 1969; Jackson, *et al* 1965; Grondin, *et al* 1965; Koven, 1967; Schaffer, *et al* 1963; Guslits, 1968; Lorian, *et al* 1967).

In view of the aforementioned characteristics, it was decided to have a clinical trial of lincomycin hydrochloride monohydrate, (Lincocin, an Upjohn product) at the department of obstetrics and gynaecology, S. M. S. Medical college, Jaipur.

Materials and Methods

Patients having a clinical picture of staphylococci infections were treated with the drug. Lincocin was given orally in capsules in doses of 500 mg, six hourly on an empty stomach. In case of severe infections two cc., of sterile solution was given intramuscularly every twelve hours. In few cases the drug was given as an infusion by intravenous route, keeping the dosage of two cc. of sterile solution every eight hours.

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In the present study thirty patients were treated with Lincocin at State Zanana Hospital, Jaipur. The cases treated ranged from acute bacterial infection of the breast, puerperal sepsis, post-operative wound infections, to septic abortions. During the treatment after every six days and after complete clinical recovery, urinalysis, full blood counts, liver and renal function tests were performed.

CASE REPORTS

Case 1

Mrs. R., Twenty-five year old woman, with a history of amenorrhoea since four months, had bleeding per vaginam with pain and fever since last two days. On admission her temperature was 39.7°C. She complained of severe pain and tenderness over the lower abdomen. Per vaginal examination showed that her cervical os was open and an offensive discharge was noted. A high vaginal swab was taken for laboratory examination. As the clinical diagnosis of inevitable septic abortion with incipient pelvic peritonitis was made, treatment was started with 2 cc. intramuscular injection of Lincocin, followed by another injection after twelve hours. Thereafter the drug was given orally, 500 mg. capsules, six hourly. Temperature came down to normal within thirty-six hours, decrease in pulse rate was noted within four hours of the first dose. E.SR., came down from 68 to 24 on the first day. After two days the drug was tapered to one capsule thrice per day for four days. Patient was discharged fully recovered on tenth day.

Case 2

A lower segment caesarean section was performed on a thirty-three years old patient for cervical dystocia. Patient was given Reverine 275 mg. by intravenous route twelve hourly for two days, post-operatively, followed by Ledermycin 300 mg. capsules twelve hourly for three days. On the seventh day patient developed fever with rigor. Fever was recorded at 39.7°C. On examination it was found to be wound infection. Cellulitis of the lower abdomen was present. Tenderness and redness was detected on lower stiches. The wound was opened and drained and pus sent for bacteriology and sensitivity. The patient was kept on Lincocin 500 mg. capsules six hourly. Clinical recovery was noted after eighteen hours, temperature touched 37.8°C., and E.S.R., fell from 89 to 24, withn the same time. Complete recovery was obtained in four days. However, the patient was kept on Lincocin for seven days in all.

Results

Twenty-four out of thirty patients receiving Lincocin showed complete recovery. Four patients failed to show any response to the therapy due to the side infection of gram-negative organisms. One failed to respond without any apparent reason and one discontinued the treatment. There were no deaths. No instance of toxicity was noted either clinically or on laboratory evaluation.

Discussion

Problem of staphylococcal infections is still with us, although deaths from acute streptococcal diseases have become rarer now a days. The modern strains of streptococci often have formidable invasive powers. Outbreaks of wound sepsis due to group A streptococci in hospitals are reported from time to time. (Quinn and Hillman 1965; Schaffner *et al* 1969;) Several outbreaks of puerperal sepsis in maternity hospitals have been reported, (McCabe and Abrams, 1965; Mead, *et al* 1968; McIntyre 1968; Tancer *et al* 1969.) reminding us that streptococci are even today a threat to puerperal women and that the consequences of infection can be disastrous for the patients. Umbilical stump had also been responsible for puerperal sepsis outbreaks. (Kwantes and James 1956; Boissard and Eton 1956). There is no doubt that parturient women should be protected from exposure to streptococcal infection.

Thus streptococcus is still a dangerous adversary as ever. Penicillin was the drug of choice two decades ago and still is but penicillin resistant strains are comming up. However, the main problem is of the patients who are sensitive to penicillin. Tetracyclines are still being used for such patients and otherwise too, in spite of several warnings about its resistant strains. (Kuharic *et al* 1960; Parker *et al* 1962; Eickhoff *et al* 1965; Mitchell and Baber 1965; Dadswell 1967; Robertson 1968.) Risk of infection with erythromycin—resistant staphylococci in certain hospital areas is always present.

The acid-stable Lincomycin hydrochloride has got certain clear cut advantages in dealing with resistant staphylococci. It can be used orally or intramuscularly for long periods without the risk of serious toxicity. Thus, it becomes very useful for patients who cannot be given penicillins because of the drug-sensitization, or when the resistance has been shown to the newer penicillins also. About 50% of the septic abortions are due to the staphylococci or streptococci, and possibility of their resistant is always there. Knox *et al* published a report in 1962 indicating that staphylococcus aureus is one of the most likely organism to colonise operation wounds in hospitals.

In conclusion, it may be stated that it seems Lincomycin has returned the therapy of severe generalised gram-positive infections to the status that existed when penicillin was first introduced. Lincomycin is undoubtedly the drug of choice for infections such as acute otitis media, septic abortions, puerperal sepsis, umblical sepsis, soft tissue infections and other miscellaneous infections caused by gram-positive cocci. Due to its deep penetrating power in bone it becomes the drug of first choice for osteomylitis.

Summary

To the authors Lincomycin appears to be an effective drug in the treatment of wounds and soft tissue infections, particularly in case of patients who have demonstrated hypersensitivity to penicillin, and in cases where the infection is due to resistant staphylococci. It is a drug of choice for the immediate therapy of septic abortions and puerperal sepsis.

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