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Septilin as an Adjuvant to Antibiotics in the Treatment of Acute Bacterial Pneumonias

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INTRODUCTION

Non-specific infections of the upper and lower respiratory tract are of common occurrence. Concurrent with the use of higher antibiotics in the treatment of these infections, the incidence of organisms developing resistance is also on the increase. Treatment of such infections sometimes calls for prolonged use of antibiotics, which apart from the higher cost of treatment, adds to it the toxic side-effects of chemotherapy. Septilin is an indigenous drug which is reported to be effective in the treatment of various upper respiratory tract infections including a few causes of asthmatic bronchitis,[2,9] sinusitis,[7] acute and chronic infections of the ear, nose and throat where it has been found to be effective in patients who had developed resistance to commonly used antibiotics.[3,4]

In view of various reports about its efficacy in the treatment of infections of the upper respiratory, dermatological,[5,6] and dental orgin,[8] Septilin was taken up for trial in the treatment of lower respiratory infections like non-specific bacterial pneumonias. Since this was a pilot study, it was considered appropriate to test the efficacy of Septilin in conjunction with an antibiotic against an identical group of patients on antibiotics alone.

MATERIAL AND METHODS

Forty patients, of both sexes, in different age groups, admitted to the medical department of the E.S.I. Hospital, Ayyanavaram, Madras, were taken up for the present study. The clinical diagnosis of acute bacterial pneumonia of non-specific origin was confirmed in all the forty patients by appropriate investigation. These patients were divided into two groups for the purpose of study.

Group A: Cases on antibiotics alone.
Group B: Cases on antibiotics + Septilin.

Before being subjected to the trial each patient's symptoms were noted, he was physically examined and relevant investigations like blood count, sputum studies for culture and sensitivity for pathogenic organisms and X-rays of the chest were done. The cases in Group 'A' received the appropriate antibiotics alone in the standard dosage according to the sputum culture and sensitivity studies. The cases in Group 'B' were given the appropriate antibiotic together with Septilin in a dosage of 2 tablets three times daily. The response of the cases to treatment in Group 'A' and Group 'B' was assessed every week by enquiring into the symptoms, physical examination of the patients, X-rays, chest and sputum culture studies.

RESULTS AND OBSERVATIONS

Table I: Showing the age distribution

Age in years	No. of cases on Antibiotics alone (Group A)	No. of cases on Antibiotics + Septilin (Group B)
11 - 20	5	-
21 - 30	5	7
31 - 40	3	8

41 - 50	5	5
51 - 60	-	-
61 - 70	1	-
71 and above	1	-
Total	20	20
The mean age of Group A patients - 33 years The mean age of Group B patients - 34.5 years There is no difference between the mean age of Group A and Group B cases - (p<0.05)		

Table II: Showing the sex distribution

Sex	No. of cases on Antibiotics alone (Group A)	No. of cases on Antibiotics + Septilin (Group B)
Male	12	16
Female	8	4
Total	20	20
There is no difference between the two groups with respect to sex (p<0.05)		

Assessment of sputum culture and sensitivity studies during the pre-treatment period shows that cases in both Group A and B are identical with regard to the type of organism grown in the sputum culture and their sensitivity pattern to antibiotics. At the end of the first week following institution of treatment in Group A (cases on antibiotics alone), there were 13 sputum positive cultures (65%) and 7 sputum negative cultures (35%), whereas in Group B (on Septilin + antibiotics) there were only 8 sputum positive cultures (40%) and 12 sputum negative cultures (60%). There was a significant difference between the two groups since cases treated with Septilin and antibiotics had more sputum conversions to a negative culture (60%) as compared to cases treated by antibiotics alone (35% negative sputum cultures). p<0.001. During the second week, Group 'B' patients on Septilin and antibiotics showed a 100% recovery with all the remaining patients (8 out of 8) becoming culture negative, while Group A cases on antibiotics alone still showed positive cultures in 87.5% of the cases (1 out of 8 positive cultures becoming negative) p<0.001. Even during the third and fourth week of treatment, positive sputum cultures were still observed in Group A cases on antibiotics alone.

Group B patients on Septilin and antibiotics showed a rapid radiological clearance with 12 out of 20 patients (60%) recovering during the first week of treatment and the remaining 8 patients out of 20 (40%) recovering during the second week, thus making a 100% recovery during the second week (p< 0.001), whereas, Group A patients on antibiotics alone showed a slower radiological clearance with 5 out of 20 patients (25%) recovering during the first week of treatment, 7 out of 20 patients (35%) recovering during the second week, 4 out of 20 patients (20%) recovering in the third week and the remaining 4 out of 20 patients (20%) recovering in the fourth week.

Table III A: Showing the sputum culture and sensitivity of cases on antibiotics

	No. of cases				Sensitivity								
Weeks	Total No.	+ve culture	-ve culture	Organisms grown and the No. of cases	P	Tet.	SM.	Chl.	Amp.	Ery.	Kan.	Gent.	Su
Pre-treatment													
	20	17	3	Streptococcus 5	S	S	S	S	S	S	S	S	S
				Staphylococcus 5	R	S	S	S	S	S	S	R	R
				Coliforms 3	R	S	S	S	S	R	S	R	R
				Pseudomonas and Streptococcus 2	R	R	R	R	R	R	S	S	R

				Streptococcus and Coliforms 1	R	R	S	S	S	S	S	R	R
				Staphylococcus and Coliforms 1	R	R	R	R	R	R	S	S	R
1 Week													
	20	13	7	Streptococcus 3	R	R	R	R	R	S	S	S	R
				Staphylococcus 3	R	R	S	S	S	S	R	R	R
				Staphylococcus 3	R	R	S	S	S	S	R	R	R
				Coliforms 5	R	R	R	S	R	S	S	S	S
				Pseudomonas, Coliforms & Staphylococcus 2	R	R	S	S	S	S	S	R	R
2 Weeks													
	8	7	1	Streptococcus 1	R	R	S	R	R	S	R	S	R
				Staphylococcus 2	R	R	S	R	S	S	S	R	S
				Coliforms 2	R	R	S	R	R	S	R	S	S
				Coliforms & Staphylococcus 1	R	R	S	R	S	R	R	R	R
				Streptococcus and Staphylococcus 1	R	R	R	R	R	S	R	R	S
3 Weeks													
	4	3	1	Streptococcus 1	R	S	S	R	R	S	R	S	S
				Staphylococcus 1	R	R	S	R	S	S	S	R	S
				Coliforms 1	R	R	S	R	R	R	S	R	S
4 Weeks													
	4	2	2	Staphylococcus 1	R	R	R	R	S	R	R	R	R
				Staphylococcus and Coliforms 1	R	R	S	S	R	S	S	R	R

P.: Penicillin Tet.: Tetracycline SM.: Streptomycin	Chi.: Chloramphenicol Amp.: Ampicillin Ery.: Erythromycin	Kan.: Kanamycin Gent.: Gentamycin Su.: Sulpha	S: Sensitive R: Resistant

Table III B: Showing the sputum culture and sensitivity of cases on Septilin + antibiotics													
	No. of cases				Sensitivity								
Weeks	Total No.	+ve culture	-ve culture	Organisms grown and the No. of cases	P.	Tet.	SM.	Chl.	Amp.	Ery.	Kan.	Gent.	Su.
Pre-treatment													
	20	17	3	Streptococcus 6	S	S	S	R	S	S	S	S	S
				Staphylococcus 4	R	R	R	R	S	S	S	R	R
				Coliforms 4	R	R	S	R	R	R	S	R	R
				Coliforms & Streptococcus 2	R	R	S	S	S	R	R	R	R
				Streptococcus & Staphylococcus 1	R	R	S	R	S	R	S	R	R
1 Week													
	20	8	12	Streptococcus 2	S	R	S	R	S	R	R	R	R
				Staphylococcus 2	R	R	S	S	R	R	R	R	R
				Coliforms 3	R	R	S	S	R	R	S	S	S
				Coliforms, Strepto & Staphylococcus 1	R	R	S	R	R	S	S	R	R
2 Weeks													
	8	Nil	8	+	-	-	-	-	-	-	-	-	-

P.: Penicillin Tet.: Tetracycline SM.: Streptomycin	Chi.: Chloramphenicol Amp.: Ampicillin Ery.: Erythromycin	Kan.: Kanamycin Gent.: Gentamycin Su.: Sulpha	S: Sensitive R: Resistant

DISCUSSION

Cases treated with a combination of Septilin and antibiotics showed an early bacteriological clearance as compared to the group of cases on antibiotics alone. Whether this early clearance of pathogenic organisms from the sputum of patients on Septilin + antibiotic combination could be attributed to any anti-bacterial property it might possess is suggested by the earlier studies of Gujral *et al.* (1982). They found that Septilin possesses anti-bacterial and anti-inflammatory properties as demonstrated by the granular pouch method in experimental rats.[1] Others have reported that when given orally, Septilin was shown to inhibit the growth of *Staphylococci, Streptococci, Pneumococci, Micrococcus, Catarahalis H-influenza, Diphtheroids* and *Klebsiella.* Gadre, K.C. *et al.* (1982) observed that cultures of material obtained by post-nasal swab from patients before and after therapy with Septilin had a sterilising effect on organisms associated with acute rhino-sinusitis.[2] In keeping with the early bacteriological clearance of cases in the Septilin group, a quicker radiological resolution was observed in these cases. By the second week of treatment, all the 20 patients (100%) in the Septilin group had resolved completely, whereas complete radiological resolution was effected in the fourth week in the group of patients on antibiotics alone. Umesh Chandra (1981) has reported similar results with 70% excellent response in the Septilin group as compared to the antibiotic group in cases of chronic sinusitis.[10] S.K. Mishra (1981) also obtained good results with Septilin in the treatment of various upper respiratory tract infections.[9]

It is concluded that Septilin when used as an adjuvant to antibiotics shortens the course of the disease and effects an early recovery in patients with non-specific bacterial pneumonias.

SUMMARY

Twenty patients in Group A with acute bacterial pneumonias were treated with antibiotics alone and another 20 patients in Group B with similar diagnosis were treated with antibiotics and Septilin. The

patients in both the groups were matched for their age and sex. By the second week of treatment all the 20 patients (100%) in Group B (Septilin and antibiotics) had recovered completely whereas Group A patients on antibiotics alone showed a much slower recovery taking up to four weeks. No toxic side-effects peculiar to Septilin-antibiotic group were observed.

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