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# Acute bronchitis-efficacy of erythromycin base (Ery-Max®) administered twice or four times daily

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## INTRODUCTION

Erythromycin has been documented to be an effective antibiotic in the management of patients with acute exacerbations of acute and chronic bronchitis (Butzler et al., 1979; Fraschini et al., 1979; Knowles et al., 1982).

Despite widespread use of erythromycins in the treatment of Mycoplasma and several other bacteriological infections, controversy exists regarding the optimal dosage form of oral erythromycin.

Erythromycin is taken two, three or four times daily in common infections and a twice daily dosage is of growing usage but not well documented. A new biopharmaceutical form of erythromycin consisting of capsules containing enteric-coated pellets of erythromycin base has recently been developed. Pharmacokinetic cross-over studies have demonstrated serum concentration of erythromycin after the base at least as high as and in most cases greater than after the stearate (Josefsson et al., 1982).

Therefore the aim of the study was to compare the clinical efficacy and tolerance of this new erythromycin formulation, when administered twice or four times daily in acute bronchitis.

## PATIENTS AND METHODS

Patients of both sexes over 16 years of age presenting with acute purulent bronchitis were included. Acute bronchitis was defined as being associated with a production of mucopurulent or purulent sputum.

Furthermore, at least three of the following criteria were fullfilled: a. increased cough, b. increased sputum production with purulent sputum for 3–4 days, c. ronchi, d. leukocytosis ( > 10,000 white cells), e. temperature of at least 38°C.

Sedimentation rate and X-ray of thorax were also taken. Sputum was collected over a 2-h-period on admission and on follow-up visit. The degree of purulence of the sputum was assessed macrocopically and scored (May and May, 1963). All

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patients were examined clinically at the time of admission and on the 10th day of treatment. The patients were given Ery-Max® 500 mg twice or 250 mg four times daily for 10 days.

## RESULTS

Trial records were evaluable for 96 of the 100 patients. Sex and age distribution of the patients were comparable in the two groups. All patients had a sputum with "trace of pus" before erythromycin treatment and the sputum purulence scores are given in Table 1. Sputum scores were comparable in the two groups ($p < 0.05$). The clinical effect (Table 2) was comparable: 45 and 47 out of 48 patients had a good or improved clinical effect in the 500 mg × 2 and 250 mg × 4 group, respectively ($p < 0.05$). Treatment was twice discontinued in both evaluation groups. The total number of side effects were few and comparable in the two groups.

Table 1. Sputum purulence scores before and after treatment with Ery-Max® for 10 days.

| dosage | before | after 10 days |
|---|---|---|
| B.I.D. | 2.25 | 0.65 |
| Q.I.D. | 2.33 | 0.56 |

Table 2. Results of treatment with Ery-Max® given twice or four times daily for 10 days.

| | dosage | |
|---|---|---|
| clinical effect | B.I.D. | Q.I.D. |
| good | 23 | 25 |
| improved | 22 | 22 |
| failure | 3 | 1 |
| unassessable | 2 | 2 |
| total | 50 | 50 |

## CONCLUSIONS

Clinical efficacy and tolerance were comparable in both treatment groups. The side-effects were few in both groups. Ery-Max® is a good alternative for the treatment of acute purulent bronchitis also when administered twice daily.

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