

Dentistry, Herpes Zoster, and Varicella

SIR,—Drs. D. J. Eggleston and F. F. Nally (15 August, p. 407) report that dental pain can be the presenting symptom of herpes zoster. Personal experience of zoster sine herpette shows that this too can be encountered by dental surgeons.

In my own case spasms of pain developed in a localized part of the lower jaw on the 12th day of the illness. Other features were dermatomal pain and hyperalgesia within the distribution of the first and third divisions of the trigeminal nerve, paraesthesia within that of the first division of the nerve, spasms of pain in the nasopharynx and ear, and upper deep cervical lymphadenopathy. The diagnosis of zoster was established by a serological method.¹

In the case of herpes zoster reported by Dr. R. J. West (25 July, p. 222) the eruption developed three days after dental extraction. Both Dr. West and Dr. G. D. W. McKendrick (5 September, p. 587) presume that the disease was an effect of dental treatment but, if treatment was sought because of pain, the converse is much more probable.—I am, etc.,

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REFERENCE

¹ Ross, C. A. C., Sharp, J. H. S., and Ferry, P., *Lancet*, 1965, 2, 708.

Bromhexine in Chronic Bronchitis

SIR,—In their recent report, Dr. W. F. D. Hamilton, and others (1 August, p. 260) have demonstrated very convincingly that bromhexine reduces sputum viscosity and is able to mobilize retained viscid bronchial secretions. We would like to present data from a recent investigation of our own, which shows that long-term treatment with bromhexine can produce sustained objective and subjective improvement in chronic bronchitic patients.

Seventy-five patients with chronic bronchitis (M.R.C. definition) were admitted to a study of bromhexine 24 mg. daily and a placebo, each patient being treated continuously from November 1968 to April 1969. Patients were excluded if they were over 67 years of age, had had symptoms of bronchitis for more than eight years, had a localized or specific pulmonary lesion, extensive emphysema, or severe heart failure. In addition patients with airways obstruction, reversible by orciprenaline aerosol,

were also excluded. After measuring P.E.F.R., F.E.V.₁ and V.C., the patients were put into groups designated slight, moderate, or severe disability, based on their overall clinical condition, and randomly allocated to either bromhexine or placebo treatment. They then attended monthly for measurement of their ventilatory capacity, and, in addition, a questionnaire was filled in which indicated among other things the number of days of illness, antibiotic consumption, and a subjective assessment of the overall change in their condition. During the study, intercurrent infections were treated as appropriate.

At the end of the study, results from 61 patients (34 males, 27 females: age range 14-67 years; mean 55.4 years) were suitable for evaluation. Of the 14 patients excluded, five on bromhexine and four on placebo failed to attend follow-up regularly, while three patients on bromhexine and two on placebo developed illnesses not related to their chest disease. On analysis it was found that 30 patients had taken bromhexine (9 slightly, 10 moderately, and 11 severely disabled) and 31 patients placebo (12 slightly, 10 moderately, and 9 severely disabled). Of these 61 patients, results from 55 were amenable to statistical analysis of ventilatory capacity (six patients, four on bromhexine and two on placebo, did not have tests done on the final attendance at the end of the six months). For each of the changes (Δ F.E.V.₁, Δ V.C., and Δ P.E.F.R.) the two treatments were compared by analysis of variance over the whole study period, for each severity group separately and for all groups combined.

From these results (Table) it can be concluded that, judged by the significant improvement in F.E.V.₁ and P.E.F.R. bromhexine was more effective than placebo. Looking at the disability groups, although all patients had irreversible airways obstruction, only the severely disabled group did not show an improvement in any parameter. Analysis of the patients' questionnaire data showed that with bromhexine 25 felt better (including eight in the severe group), four were unchanged, and one worse; while with placebo only six felt better (two in the severe group), with 20 unchanged and five worse. Overall there were less days of illness and less antibiotic consumption in the bromhexine-treated group.

These results are in agreement with those of Gent *et al.*¹ and show that in patients with less severely impaired ventilatory capacity mucolytic therapy with bromhexine

is capable of producing objective as well as subjective improvement. Like Hamilton *et al.* and Gent *et al.* our patients with severely impaired ventilatory capacity when treated with bromhexine did not improve objectively, but subjectively they felt better.

We are indebted to Dr. G. B. Hill, General Register Office, London, for statistical analysis.

—We are, etc.,

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REFERENCE

¹ Gent, M., Knowlson, P. A., and Prime, F. J., *Lancet*, 1969, 2, 1094.

Suggestion for Tetanus Prophylaxis

SIR,—No one doubts but that the best approach in eliminating tetanus from a community is through public prophylactic inoculation with tetanus toxoid. But so often where community prophylaxis is most needed, the enormous number of people involved baulks even the consideration of attempting such. Would the following suggestion for an optimal tetanus prophylaxis in heavily populated areas be worth trying?

Here, in rural Bihar, India (population 1100 to the square mile), we treat some 350 cases of tetanus a year. (We have recently lowered our mortality among non-neonatal cases from 61% to 37% using high doses of betamethasone).¹ Of our cases, adult women account for 22%, neonates 34%, and all children up to 15 years 33%. If in the first instance only children and women between 15-40 years (60-70% of the population) were adequately inoculated with toxoid (three injections) in nine months the incidence of tetanus could be reduced by as much as 89%. Reckoning on antepartum immunity still being effective for five years, all that would be needed would be a single inoculation to children in the 5-10 years bracket. Such children would then have had two doses during these years. The inoculation of five to ten-year-olds would be done routinely every five years at least, after the first big inoculation campaign. The rest of the population could reasonably be protected by the giving of a booster toxoid injection in the event of injury or pregnancy. This could result in all persons ultimately being inoculated in utero, having routine boosters in the 5-10 year period, and as and when circumstances required it. A slower but perhaps equally effective programme would be at first to inoculate only pregnant women, and then give the routine booster doses at the five to ten-year age groups.

This suggestion depends of course on how long antepartum-induced immunity lasts in a child. We have had no children contract tetanus who were immunized in utero. I would appreciate information and observation on this subject from any of your readers—I am, etc.,

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¹ Sanders, R. K. M., Strong, T. N., and Peacock, M. L., *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 1969, 63, No. 6, 746.

TABLE.—Changes in Ventilatory Capacity Between the First Readings and After Six Months' Treatment

Severity	Slight		Moderate		Severe		All Cases	
	Bromhexine	Placebo	Bromhexine	Placebo	Bromhexine	Placebo	Bromhexine	Placebo
Mean F.E.V. ₁ Number of Patients	254.2 6	NS 170.8 12	445.0 10	** 25.0 10	105.0 10	NS 85.7 7	270.2 26	(*) 100.0 29
Mean V.C. Number of Patients	233.3 6	NS 200.0 11+	238.5 10	NS 180.0 10	165.0 10	NS -20.7 7	209.0 26	NS 137.7 28
Mean P.E.F.R. Number of Patients	62.5 6	(*) 4.3 12	46.2 10	(*) 3.6 10	20.7 10	NS 26.9 7	40.2 26	* 9.5 29

** = P 0.01
* = 0.01 P 0.05
(*) = 0.05 P 0.10
NS = P 0.10

+ = One patient did not have his vital capacity measured.