approach unsupported by practical experience led to many of the weaknesses of the 1946 Health Act.

For example, we consider that the case for the attachment of health visitors, nurses and midwives to general practitioners has now been proved. On the other hand, the roles of the medicosocial worker and psychiatric social worker in general practice have not yet been fully investigated.

Whatever decisions are taken now or in the future, they should not be assumed to be static, there will always be room for reassessment and reappraisal. Different areas will have different problems, and therefore each authority must have latitude in establishing services best suited to their needs.

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## CLINICAL TRIAL

# HAY FEVER

## Report on 162 cases treated by repository method in 1966

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THE TERM 'HAY FEVER' WAS adapted from the laity by Elliotson (1831). This condition was first described by Botullus of Padua (Opera Omnia 1565) as being typified by headache, sneezing, nasal irritation and itching. Joseph Binniger (1673), Bermingerus (1673), Valerianus (1678), Lodellus (1683), De Reveuve (1691) all associated this picture with a sensitivity to roses. Bostock (1819), himself a sufferer, stressed the seasonal character of the symptoms. These could be relieved by avoiding contact with pollen (Cazenove 1837). The diagnosis was confirmed by nasal instillation of pollen (Blackley 1873).

Treatment was by multiple injections (15 to over 50) of aqueous solutions of pollen (Noon and Freeman 1911). The pollens were obtained

from grasses with small inconspicuous flowers without scent or nectar and are wind pollinated—the granules being from 6–180 microns in diameter. In spite of its inconvenience this method was in use for over 50 years. Mary Loveless (1947) introduced the one-injection repository method —this was later modified (M. Loveless 1957, Brown 1958) to two and, subsequently, three injections using the antigen (grass pollen) in the aqueous phase in a mineral oil 'drakeol' and an emulsifying agent 'arlacel' which is of sufficient stability to retard the absorption of the antigen.

In the United States of America both the Food and Drug Administration and the National Institute of Hygiene have banned this repository method of treatment. There, it is used only under research conditions. In England it is marketed commercially and is known as D-Vac Pollen (Beecham). This has been used for the past three years at the North Middlesex Hospital Allergy Clinic—the dosage and the method of administration being as advised by the manufacturers. In attempting to minimize reactions, all the injections were given at the clinic by members of the hospital staff.

Although hay fever does not kill, it can be severely disabling and prove to be a great inconvenience especially at examination times and times of special study, stress and effort.

The diagnosis in all of the undermentioned cases was confirmed by the history and by skin tests—bronchial provocation tests were not found to be necessary.

One hundred and sixty-two patients were treated in 1966—these had been referred to the department with a diagnosis of hay fever. They had all previously been treated with antihistamines, some for many years, and now the patient or the family doctor, or both, felt that the symptoms were of sufficient severity to warrant further investigation. Of these 29 were associated with pollen asthma, i.e. asthma developing on exposure to pollen and so occurring by day. Of these 29, 20 were male and nine female, one was under the age of ten and nine between ten and 20; the remainder were evenly distributed between 20 and 50. Twenty-one of these were being desensitized for the first time, 11 once only and ten twice.

*Results.* Twenty-three improved considerably, but in six there was no change.

The following results support the theory that there are several distinct allergens responsible for the hay fever syndrome—as these demonstrated selective improvement. With two there was no improvement with the hay fever symptoms but the pollen asthma was considerably benefitted. In a further two, the hay fever benefitted, but not the pollen asthma. In one, both the hay fever and pollen asthma benefitted, but the eye symptoms were unaffected. Moreover, three patients who previously had had hay fever only, developed pollen asthma as a new symptom for the first time.

Four patients with severe pollen asthma in previous years, all requiring steroids during the pollen season, and one hospital admission for status asthmaticus, were not benefitted.

Local reactions in these patients were mild, in seven the local swelling had disappeared within three days, in a further three the pain and swelling persisted for more than two weeks. In none did a residual nodule appear.

In the 162 patients (96 male, 66 female) treated during 1966, the age of onset was before 20 years in 90 per cent and before ten in 40 per cent; in 50 per cent onset occurred between the ages of ten and 20. Ninety-two patients had no previous treatment, ten had had two previous courses of repository injections, 30 had had one such course and a further 30 had had a course of aqueous desensitizing solutions. A family history of either hay fever or other allergic disease was obtained from 55 patients (34 per cent), 29 of pollen asthma. Five, with a family history of perennial rhinitis with marked seasonal exacerbation, had strongly positive skin test reactions for dust, mould, and animal hair in addition to grass. In ten the duration of the hay fever symptoms extended beyond early June and mid July.

The table shows the age at which the patients were referred to hospital.

TABLE I

*Age at which referred to hospital:*

| Age | 5–10 | 10–20 | 20–30 | 30–40 | 40–50 | 50–60 | 70 |
|---|---|---|---|---|---|---|---|
| | 2 | 49 | 44 | 44 | 18 | 4 | 1 |

Those with early symptoms (February, March, April) were due to tree-sensitivity. Those with additional late symptoms (August, September, October) were due to mould, weed, spore, nettle or plantain sensitivity. This was confirmed by skin tests. The initial treatment in such cases is to eliminate the grass symptoms first by desensitizing—the early and late symptoms are usually controlled by antihistamines. If they prove to be resistant, the desensitizing programme for subsequent years can be modified to include these.

## Results

With the repository method, 90 per cent improved, 40 per cent of them with no further symptoms and the remaining 50 per cent felt that the injections had been worthwhile—this compares favourably with the results obtained with multiple aqueous injections.

*Reactions.* In 14 patients the soreness persisted for more than 20 days, of these four had persistent swelling over one week, of which one persisted beyond six weeks.

(1) One patient developed a severe localized erythema—this was after the second injection in a child aged nine (750 units). The erythema spread over the whole arm and the axilla to the chest wall and nipple line. It persisted for seven days and subsided spontaneously. The mother did not report this either to her own doctor or to the hospital until the next visit, as she said the injection had been given at the hospital and in consequence all would be in order. No further injections were given in this case. The relief from his hay fever was excellent.

(2) In six there were residual nodules, of which two nodules were still tender eight months after injection.

(3) A localized wheal developed on the site of the injection—this only occurred when the injection area was exposed to sunlight.

(4) One patient developed severe angioneurotic oedema, requiring adrenalin injections for its control.

(5) Two patients developed urticaria. One of these was mild the other severe. This cleared in one week.

(6) Four patients complained of drowsiness due no doubt to the antihistamines given before and after the injections.

In no case was there any localized abcess formation or severe oedematous reaction such as described by Gwyn Evans (1963).

*Asthma.* Four patients developed asthma following the repository injections; in two the reactions were mild and did not require any specific treatment. One required a bronchodilator for ten days but was not away from work. One woman, aged 20, who had been admitted to hospital in status asthmaticus during the pollen season of the previous year, developed a severe local reaction immediately after her third injection. She felt ill, was wheezy and required steroids for three weeks. During the hay fever season she again developed status asthmatibus and was admitted to hospital for further treatment with steroids from which she was not completely weaned eight months after discharge from hospital.

*Asthma and hay fever.* The following patterns were observed:

(1) Three patients developed wheezing for 2–12 days after the injection. One wheezed for three weeks and required treatment with steroids. In one status asthmaticus came on within a few hours of the injection.

(2) Nocturnal asthma troubled five patients during the hay fever season. Their skin tests were strongly positive to grasses as well as to feathers, animal skin and dust. They required the removal of the allergens from their bedrooms before they were relieved.

(3) In three patients pollen asthma occurred *de novo* in spite of the repository desensitizing.

It was not possible to predict which patients would develop reactions nor was it possible to predict the relief that would be obtained from the desensitizing. The previous absence of reactions, local or general, did not preclude the development of a reaction, nor did the size of the skin test reaction help in deciding whether reactions would occur or the degree of improvement that would result.

The late occurrence of carcinogenic changes in the nodules is a possibility which should be borne in mind. A safer vehicle than the mineral oil, possibly silicones, would certainly be an asset as this method, in spite of local reactions, is most popular with the patients.


## Summary

One hundred and sixty-two patients with hay fever were treated in 1966 by repository injections.

32 cases—local reactions were mild.
6 ,, —residual nodules developed.
15 ,, —more severe local reactions developed.
3 ,, —severe general reactions.
1 ,, —severe angioneurotic oedema developed.
1 ,, —severe urticaria.
1 ,, —status asthmaticus.



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## THERAPEUTIC TRIAL

# MIGRAINE

## Mefenamic acid (ponstan) in the treatment of attacks

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IT HAS BEEN ESTIMATED[1] that between five and ten per cent of the population suffer at some time from a form of migraine. For those whose attacks are frequent or severe and who have to work regardless of the intensity of the attack, migraine can become a major personal problem.

*Prophylaxis.* Physicians often advise their migrainous patients to change their jobs, to insulate themselves from the major stresses of modern living, or to find time for more relaxation, but it is seldom possible to do this. Therapeutically, small doses of barbiturates are often prescribed but in intractable cases nightly doses of ergotamine tartrate may be needed. More recently, considerable success has been claimed for the serotonin-antagonist methysergide, though this drug has numerous side effects if given in large doses or for long periods[2 3], and it is still very expensive.

*Treatment.* Ergotamine tartrate is still the drug of choice be it taken orally, sublingually, by aerosol or given by the parenteral route. Taken orally many people experience nausea which only adds to that already experienced in the attack, and some people are unduly sensitive to any