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USE OF DISODIUM CROMOGLYCATATE DURING THE COURSE OF SPECIFIC DESENSITIZING TREATMENT IN ASTHMATIC PATIENTS

By

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Since its introduction in the treatment of bronchial asthma Disodium Cromoglycate (DSCG) has been the subject of a good many studies generally with encouraging results (1, 3, 6, 8, 10). The use of this drug, in most cases as a preventive measure against asthmatic attacks, cannot, however, replace other therapeutical means at our disposal, particularly specific desensitization which constitutes the treatment of choice in most cases.

The present report contains our clinical observations on the use of DSCG during the course of specific desensitizing treatment of patients suffering from chronic asthma.

MATERIAL AND METHODS

The material comprises a total of 52 asthmatics, 22 male and 30 female, aged between 17 and 52 years. The duration of the disease ranged from 3 to 12 years.

In all cases the disease was a severe form of bronchial asthma previously treated with ample use of corticoids and sympathomimetics.

On the basis of clinical data and specific allergological tests (skin tests), the material can be divided as follows:

1) Seasonal asthma (Pollinosis)	7 cases
2) Chronic exogenous asthma (House dust)	16 cases
3) Chronic asthma of mixed origin (House dust - Bacterial allergy)	29 cases

The specific desensitizing therapy was conducted as perennial treatment. For this purpose we used aqueous extracts from the Hollister-Stier Laboratories for the pollens, and from Endo Laboratories for the house dust. In cases with a significant microbial factor autovaccines or commercial stock vaccines were employed simultaneously.

The DSCG was administered by inhalation with a special appliance (Spinhaler) in a dosage of 4 gelatine capsules daily.

Depending on the time of administration of the drug in relation to specific desensitizing treatment, the patients were divided into the following two groups:

(1) Those who started specific desensitizing treatment concomitantly with administration of DSCG (28 cases of chronic asthma);

(2) Those who had received DSCG before starting specific desensitization (7 cases of seasonal asthma and 17 cases of chronic asthma). This treatment had been discontinued by the patients themselves after at least 40 days because of failure to achieve a satisfactory therapeutic result. All patients in this group were given DSCG anew after desensitizing treatment and during its continuation in maintenance doses owing to persistence of some asthmatic symptoms.

For seasonal asthma the drug was administered during the period of challenge. For chronic asthma its administration was prolonged for over 2 months according to the case.

All patients were under direct control, the clinical data being recorded in detail twice a week.

Evaluation of the therapeutic results of combined specific desensitization and DSCG treatment was based on intensity and frequency of asthmatic attacks, cough, sputum and the findings from physical examination of the chest.

RESULTS

The therapeutic results obtained are graded as follows:

- (1) Excellent: complete remission of symptoms;
- (2) Good: marked improvement of dyspnoea and reduction in frequency of asthmatic attacks;
- (3) Moderate: slight reduction of intensity and frequency of attacks;
- (4) Nil: no appreciable therapeutic result obtained.

The clinical responses to the use of DSCG concomitantly with or after specific desensitizing treatment are reported in Tables 1 and 2 respectively, whence it appears that the results achieved were generally satisfactory. Out of 52 patients, only in 3 cases with a predominant bacterial causative pathogenesis

further therapeutic measures were needed, particularly corticoids, in order to control the asthmatic attacks.

Progressive reduction until discontinuance of DSCG was achieved in 35 of the 45 patients with chronic asthma.

No unusual allergic reactions from the allergens were observed during the course of DSCG administration.

TABLE 1
Use of DSCG in Chronic Asthma During the Course of Specific Desensitizing Therapy.

Result	Exogenous asthma	Asthma of mixed aetiology (inhalants- bacterial allergy)	Total
Excellent	8	7	15
Good	2	7	9
Moderate		2	2
Nil		2	2
Total	10	18	28

TABLE 2
Use of DSCG in Bronchial Asthma After Specific Desensitizing Treatment and During its Continuance in Maintenance Doses.

Result	Seasonal asthma (pollinosis)	Chronic asthma		Total
		Inhalants	Inhalants- bacterial allergy	
Excellent	6	4	6	16
Good	1	1	3	5
Moderate		1	1	2
Nil			1	1
Total	7	6	11	24

DISCUSSION

Specific desensitization is already a well-established method for treating bronchial asthma. Its therapeutic result appears

gradually after a latent period of varying duration. In the more persistent cases and when this therapy fails to produce the expected results, the use of other drugs is indicated, such as corticoids, with their known undesirable effects, especially when taken over extended periods (2).

DSCG has enjoyed widespread adoption in recent years for therapeutic control of bronchial asthma, especially the exogenous form, thanks mainly to its complete atoxicity in therapeutic doses (4, 5, 6). Its use appears to diminish the need for other drugs such as corticoids and sympathomimetics (11, 13).

The action of DSCG has not yet been fully explained. Its main feature consists in an ability to suspend liberation of histamine and similar substances from the mast cells of the bronchial tree (5, 9). It does not interfere at all with the antigen-antibody union (7). Finally, its prophylactic use increases the tolerance of the bronchial tree to contact with the responsible allergen (1, 3, 10).

Experience gained on the use of DSCG concomitantly with specific desensitizing therapy is as yet insufficient. According to Svanborg (12), concomitant use of DSCG does not prejudice the specific desensitization and in some cases promotes its rapid progress.

Our own therapeutic results, assessed on clinical criteria, point to the value of DSCG when used in conjunction with specific desensitizing treatment.

The best evidence for the success of this combined treatment is offered by the group of patients upon whom the use of DSCG prior to desensitizing therapy had proved ineffective. Considerable persuasion was needed to make these patients start using the drug again after desensitizing treatment and during its continuance in maintenance doses to counter any residual symptoms. In nearly all cases this combined treatment proved effective within the first days.

In the second group of patients it was possible to cover the period of latency required until desensitization showed a clinical response, thereby avoiding the need for use of other drugs, particularly corticoids, known to have a repressive effect upon

the immunological response. That the desensitizing treatment was finally successful is shown by the fact that progressive discontinuance of the drug was achieved with, in most cases, no worsening of the patient's condition. Consequently, DSCG appears to have no unfavourable effect on the process of specific desensitization.

During the period of DSCG administration, desensitization was well tolerated and unmarked by focal reactions such as often occur in hypersensitive subjects during the treatment. This is obviously due to the prophylactic action of DSCG since in all cases preventive treatment with antihistaminics or corticoids had been systematically avoided.

It seems fair to suggest that DSCG is a valuable aid to the allergologist for controlling some forms of persistent asthma during the course of specific desensitizing treatment.

SUMMARY

Fifty two patients suffering from chronic bronchial asthma were subjected to a combination of specific desensitization and treatment with DSCG. The material included 7 cases of seasonal asthma (pollinosis), 16 cases of chronic asthma due to hypersensitivity to house dust and 29 cases of chronic asthma with a mixed aetiology (house dust, bacterial allergy). Twenty eight patients were given desensitizing therapy with concomitant administration of DSCG. In the remaining 24 cases DSCG was administered after the desensitizing treatment and during its continuation in maintenance doses for the purpose of countering any residual asthmatic symptoms. Clinical improvement was recorded in all cases except 3 with a manifest bacterial aetiopathogenic factor. It should be noted that 24 patients had received DSCG previously, before the commencement of desensitizing treatment, which had, however, proved ineffective in the usual doses. No focal reactions in connection with the allergens were observed during the course of DSCG treatment.

REFERENCES

1. Altounyan, R. E. C. (1967): Inhibition of experimental asthma by a new compound—Disodium cromoglycate "Intal". *Acta Allergol.* 22, 487.
2. Benos, S. A., Koutsoukos, A., Sotirakis, I. & Pavlatos, F. Ch. (1969): A synthetic polypeptide—b¹⁻²⁴ corticotropin—in the depot form. II. Clinical efficacy of intermittent therapy in asthmatic patients. *Acta Allergol.* 24, 178.
3. Booiij-Nord, H. & De Vries, K. (1969): Protection test on allergen challenge with Disodium cromoglycate. *Beitr. Klin. Tuberk.* 141, 173.
4. Cox, J. S. G. (1967): Disodium cromoglycate (FPL 670) ("Intal"): a specific inhibitor of reaginic antibody—antigen mechanisms. *Nature*, 216, 1328.
5. Cox, J. S. G. & Altounyan, R. E. C. (1970): Nature and modes of action of Disodium cromoglycate (Lomudal). *Respiration*, 27 (Suppl.), 292.
6. Frankland, A. W.: "Intal" and drug therapy. In "New ideas in asthma and its management". Chest and Heart Association, p. 7, London 1969.
7. Goose, J. & Blair, A. M. J. M. (1969): Passive cutaneous anaphylaxis in the rat, induced with two homologous reagin-like antibodies and its specific inhibition with Disodium cromoglycate. *Immunology*, 16, 749.
8. Howell, J. B. L. & Altounyan, R. E. C. (1967): A double-blind trial of Disodium cromoglycate in the treatment of allergic bronchial asthma. *Lancet*, 2, 539.
9. Orr, T. S. C. & Cox, J. S. G. (1969): Disodium cromoglycate, an inhibitor of mast cell degranulation and histamine release induced by phospholipase A. *Nature*, 223, 197.
10. Pepys, J., Hargreave, F. E., Chan, M. & McCarthy, D. S. (1968): Inhibitory effects of Disodium cromoglycate on allergen-inhalation tests. *Lancet*, 2, 134.
11. Read, J. & Rebuck, A. S. (1969): Steroid-sparing effect of Disodium cromoglycate ("Intal") in chronic asthma. *Med. J. Aust.*, 1, 566.
12. Svanborg, N.: Comparison between the inhibitory effects on bronchial sensitivity from dexamethasone, Disodium cromoglycate and desensitization. 7th International Congress of Allergology, Florence 1970.
13. Wüthrich, B. (1970): Erfahrungen mit Dinatrium cromoglicicum (Lomudal) in der Behandlung des Asthma bronchiale, insbesondere des Pollenasthmas. *Respiration*, 27 (Suppl.), 310.

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