TREATMENT OF DISEASE WITHOUT THE USE OF DRUGS IV SELF-TREATMENT OF ASTHMA BY THOUGHT CONTROL AND BREATHING EXERCISES

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SYNOPSIS

Five asthmatics were taught a technique of thought control and a series of daily breathing exercise to overcome their malady. The technique involves a form of daily mental exercise which leads to an increase in palmar skin resistance (GSR) and the daily breathing exercise consists mainly of gradual inspiration, retaining of the inspired air and passive exhalation. Shortly after participation their asthmatic conditions improved, and by the 8th week all experienced complete remission of their asthma and four ceased their prophylatic drug medication.

INTRODUCTION

In our study on the self-treatment of migraine by thought control (Sim, 1980b), one of the volunteers suffered from periodic asthmatic attacks besides migraine. However, throughout the 6 months of participation in the training program she experienced only 2 mild attacks of her asthma. During these two periods she was able to control the attacks by performing the mental exercise (space visualisation) and diaphragmic breathing. In this article we report a pilot study on the self-treatment of asthma by thought control and various breathing exercises of five asthmatic subjects.

METHOD

Subjects

The five asthmatics were volunteers. Their personal particulars, history of current illness and current drug medication are summarised in Table 1.

Procedure

On the first visit, subjects' skin resistance (GSR) were measured as described previously (Sim, 1980a). They were taught the body visualisation exercise and diaphragmic breathing (Sim, 1980b). Subjects' daily training program for the first week included 15 minutes of body visualisation and two sessions of 20 minutes diaphragmic breathing. Besides these exercises, subjects were also encouraged to breath diaphragmically whenever they were conscious of their breathing. They were carefully instructed to record daily their training program, asthmatic condition and drug medication. On the second weekly visit, GSRs of the subjects were recorded during the performance of the body visualisation. They,

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Table 1 Summary of subjects' personal particulars, current illness and drug medication.

SUBJECT	SEX	AGE IN YEARS	DURATION OF DISEASE	CURRENT DRUG MEDICATION	AEROSOL USAGE*
A	F	42	8 months	2mg salbutamol b.i.d.; 2mg dextrochlorpheniramine in combination with 0.25mg betamethasone o.n.; 0.22% aerosol isoprenaline sulphate when required	3
B	M	36	10 months	Chinese herbal preparation e.o.d.; aerosol hexoprenaline HC 0.2mg/metred dose when required	2
C	M	9	18 months	0.22% aerosol isoprenaline sulphate when required	3
D	F	37	3 years	4mg salbutamol t.i.d.; aerosol isoprenaline 0.08mg/puff when required	2
E	M	14	4 years	4mg salbutamol b.i.d.; 0.22% aerosol isoprenaline sulphate when required	1

*No. of times when aerosol was used to avert asthmatic attacks during the week prior to participation.

except subject D who found difficulty in performing the initial visualisation exercise and diaphragmic breathing, were then taught the following second (complete) breathing exercise. *Inhale and descend the diaphragm (as in diaphragmic breathing) counting to four; continue the inhalation by elevating and expanding the chest to receive more air, followed simultaneously by the passive inward movement of the protruded belly stopping at the count of six. Exhale by simultaneously retracting the belly and ascending the diaphragm counting to four (as in diaphragmic breathing) but keeping the chest still; continue the exhalation by allowing the chest muscle to relax and diaphragm to descend stopping at the count of six.* Repeat the breathing exercise with inhalation after a short pause. The daily training program for the second week was 15 minutes of body visualisation exercise, two sessions of 20 minutes complete breathing exercise and an added effort to breath diaphragmically at all times. Subject D continued his first week program.

Subjects' GSRs were again measured on the third visit during the performance of the body visualisation and the second mental exercise (space visualisation) was taught to subjects A, B, C and E as described previously (Sim, 1980b). The first part of the following third breathing exercise (breath holding exercise) was then taught to the same subjects. *Inhale as in complete breathing counting to six. Hold the breath and keeping the chest still steadily retract the belly counting to six. Exhale by slowly relaxing the chest muslce and allowing the diaphragm to descend counting to six.* Repeat the breathing exercise with inhalation after a short pause. The training program for the third week consisted of 15 minutes space visualisation, 20 minutes complete breathing and two 10 minutes sessions of breath holding exercise. Subjects were asked to increase the time of breath holding by one count on each succeeding day till a count of twelve was attained while keeping the time for inhalation and exhalation constant at six. Subject D performed the second week exercises.

On the fourth visit, GSRs of subjects A, B, C and E were recorded during the performance of space visualisation. They were shown the second part of the breath holding exercise which consisted of gradually increasing the time of breath holding to twenty four counts while keeping the inhalation time fixed at six counts but increasing the exhalation time by one count with a corresponding two

counts increase of breath holding i.e. from 6 counts (inhalation): 12 counts (breath holding): 6 counts (exhalation) to 6 : 14 : 7 to 6 : 16 : 8 to 6 : 18 : 9 to 6 : 20 : 10 to 6 : 22 : 11 and finally to 6 : 24 : 12. Subjects were asked to increase the time of breath holding by 2 counts on each succeeding two days when performing the two sessions of breath holding exercise. Practices of the preceding third week were also continued in the fourth week. Subject D performed the third week exercises followed by fourth week exercises after the fifth visit. Subjects continued to practise these exercises daily till after the eighth visit when the regularity of the practice was left to each subject's discretion.

RESULTS

The weekly records of the five subjects' program and progress during the first five weeks and the eighth week of participation are summarised in Table 2. Except some initial difficulties experienced by subject D all the other subjects were able to perform the exercises to the satisfaction of the investigators. With subjects A, B, C and E, increases in GSR were observed during performance of body visualisation on the second visit. However, all subjects were able to increase their GSRs to 300 K ohms or more on the fourth visit (fifth for subject D) which was after a week's practice of space visualisation. For the breathing exercises, difficulties were experienced by all subject in extending the duration of their breath holding to 24 counts in the breath holding exercise. A count of 16 was eventually set as the target which all subjects managed to achieve.

The results presented in Table 2 show that asthma could be gradually controlled by the regular performance of certain mental and breathing exercises. During the first week of participation all subjects showed a decrease in frequency of use of aerosol isoprenaline. This trend continued throughout the whole program except at times when subjects reduced or stopped their drug medication and the need to use the aerosol again arose. Most of the subjects first tried averting their asthmatic attacks by performing the given exercises, and aerosol isoprenaline was utilised only when the former remedy was ineffective in preventing the onset of the attack. Subjects were advised not to reduce or stop their medication until they had obtained complete remission for two weeks and had consulted their physicians. By the eighth week all subjects (except subject D) were free of their drug medication and asthmatic attacks. Subject D was advised by his physician to continue the medication at half the former dosage. He eventually stopped the medication on the thirteenth week and experienced mild sensation of attack in the first first few evenings which he averted by the immediate performance of slow steady complete breathing. Information supplied by the other subjects up to the twelveth week showed no relapse of the asthma with continued practice of the mental and breathing exercises at each subject's own discretion.

DISCUSSION

Performance of the mental exercise had been shown to produce an increase in GSR which reflects a decrease in the level of arousal (Sim, 1980a). The improvement of the asthmatic subjects could be due in part to the regular experience of low arousal resulting from the daily practice of the mental exercise. Leigh (1953) had shown that emotional upset could in fact precipitate or aggravate asthmatic attacks. On the other hand state of calmness induced during hypnotherapy could benefit asthmatics (Clarke, 1970) and decrease their pulmonary resistance (Smith, Colebatch and Clarke, 1970). Inclusion of psychotherapy in the treatment of asthma was also known to reduce the number of deaths due to asthma (Groen and Pelser, 1960).

Subjects felt relieved and could breath easier after performing the breathing exercise. This was especially so when they were able to avert an asthmatic attack with the breathing exercise. The relief obtained could be due to the decrease in airway resistance brought about by the exercise which consisted mainly of gradual stepwise inspiration, retaining of the inspired air and passive exhalation. Deep inspirations are known to reduce airway resistance in normal man (Bouhuys and Jonson, 1967; Vincent, Knudson, Leith, Macklem and Mead, 1970), and for as long as 2 minutes when bronchoconstriction was experimentally induced (Nadel and Tierney, 1961). Pulmonary inflation could also initiate bronchodilator effect in the trachea of experimental dog (Widdicombe and Nadel, 1963). Similarly, study with experimentarlly induced asthma in dog also showed that complete pulmonary compliance could be evoked by lung inflation (Gold, Kessler, Yu and Frick, 1972). However, in asthmatics, maximal deep inspirations had been reported to induce immediate and transcient bronchoconstriction (Gayrard, Orehek, Grimaud and Charpin, 1975). Hyperventillation, forced breathing and rapid respiratory maneuvers could also trigger asthmatic attack and increase airway resistance in asthmatics (Herxheimer, 1946; Bulter, Caro, Alcala and DuBois, 1960; Simonsson, Jacobs and Nadel, 1967). Perhaps the major difference between our breathing exercises and the other breathing maneuvers that caused airway obstruction is the coordination and self-regulation involved in performing our exercise. Our exercise is not an unpleasant and stressful maneuver imposed on the patient mainly for the purpose of finding if such a breathing would induce airway obstruction, but a gradual stepwise acquiring of a breathing rhythm where the subjects could feel the beneficial effect as they proceeded at their own pace without overexertion.

Inhalation of 6% carbon dioxide had been consistantly found to decrease airway obstruction of asthmatics during rests, after exercise and during spontaneous bronchospatic attack (Fisher and Hansen, 1976). The retention of inspired air in our breath holding exercise could increase the carbon dioxide tension and produce a further decrease in airway resistance. The inspirations which involved regular descend of the diaphragm could be expected to draw in greater volume of air into the lower region of the lungs. This could alleviate the abnormal ventilation experienced by asthmatics as recent findings had shown that in most patients abnormal ventilation occured in the lower region of the lungs (Heckscher, Bass, Oriol, Rose, Anthonisen and Bates, 1968; Dawson and Rocamora, 1974; Jones, Overton and Sproule, 1977).

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Table 2 Response of the subjects to the self-treatment during the first five weeks and the eighth week of participation

SUBJECT	WEEK	MEDICATION	AEROSOL USAGE*	GSR (K Ohms)+	TRAINING PROGRAM
A	1st	No change	2	100	Body visualisation and diaphragmic
B		No change	0	150	breathing for all subjects
C		Aerosol isoprenaline	1	100	
D		No change	2	150	
E		No change	1	100	
A	2nd	No change	0	300	Body visualisation and complete
B		No change	0	250	breathing for all except subject D who
C		Nil	0	200	continued first week program
D		No change	1	100	
E		No change	0	250	
A	3rd	2 mg salbuthamol b.i.d.	0	300	Space visualisation, complete breathing
B		2 herbal preparations per week	0	250	and first half of breath-holding exercise. Subject D performed 2nd week exercise
C		Nil	0	250	
D		No change	1	150	
E		No change	0	350	
A	4th	Aerosol isoprenaline	1	500	3rd week exercises and the second half
B		Aerosol hexoprenaline	2	350	of breath-holding exercise. Subject D
C		Aerosol isoprenaline	1	350	practised 3rd week exercise only
D		No change	0	150	
E		Aerosol isoprenaline	2	450	
A	5th	Nil	0	500	Continuation of 4th week exercises
B		Nil	0	400	
C		Nil	0	300	
D		No change	0	350	
E		Aerosol isoprenaline	1	500	
A	8th	Nil	0	500	Continuation of 4th week exercises
B		Nil	0	500	
C		Nil	0	450	
D		2mg salbutamol b.i.d.	0	400	
E		Nil	0	550	

*No. of times when aerosol were used to avert asthmatic attacks per week

†The 1st week values were the controls. The other values were taken during the performance of body visualisation on the 2nd and 3rd visits and during the performance of space visualisation on the 4th, 5th and 8th visits

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