

A STUDY OF BRONCHIAL ASTHMA IN MALTA

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Information on the incidence of bronchial asthma in different parts of the world is scanty, but available data suggest that incidence of this condition throughout the world is fairly comparable. In a survey of childhood asthma carried out in Aberdeen in 1962 and reported this year, an incidence of 4.8% was found (Dawson *et al.*, 1969); whilst Fry (1965) reported an incidence of 2.5% in his practice in the South of England. Grant (1959) claims that asthma probably affects at least 1% of the population of Great Britain. Studies in the United States of America and other countries all give an incidence close to 1%.

The incidence of bronchial asthma in Malta is not well documented. Nevertheless, the general impression among practising physicians in Malta is that the incidence of asthma in these Islands is high. During the year 1834, when the population of Malta was just over 100,000, 42 patients were reported to have received treatment for asthma at the Dispensary in Valletta (Davy, 1842). Assuming an incidence of 1% comparable with that in other countries, it is estimated that there are about 3,000 asthmatics in Malta today. The figure is bound to be much higher if other types of respiratory allergy, such as allergic rhinitis were to be included. Vaughan and Black (1954) reported an inci-

dence of 10% for all forms of respiratory allergy in the United States of America.

This paper is based on a study of a personal series of 419 patients treated for bronchial asthma between 1964 and 1968. There were 217 males and 202 females. The age of onset was worked out for all the cases and this is illustrated in *Table I*. One hundred and fifty cases (36%) had their onset in the first decade of life as compared with 39.7% of cases in Unger and Wolf's (1943) series. In Ogilvie's series of 1,000 patients, 62% had their onset below the age of 16 years as compared with 51% of the Maltese patients. It is interesting to note that in females, the age of onset extended over a longer period of time. Nonetheless the age of onset of asthma in the Maltese patients studied follows more or less the same pattern as that reported by other workers.

Thirtynine per cent of the patients were under 20 years of age when first seen compared to 31% in the age group 20 to 39, 24% in the 40 to 59 age group, and 6% in the age group 60 and over. The oldest patients seen was 71 years old and he had been suffering from asthma for 8 years. At the time when the patients were first seen, 44% had the disease for more than 5 years and 14% for over 15 years. It was also noted that many patients, who had asthma in childhood outgrew their asthmatic tendency at the time of puberty and started to have asthmatic attacks again in adult life. This state of affairs occurred in 37 of the cases and the asthma

TABLE 1

**Distribution by age of Bronchial Asthma
in 419 cases (1964-1968)**

Age	0 —	10 —	20 —	30 —	40 —	50 —	60 +	Total
Male	89	37	24	23	18	16	10	217
Female	61	41	33	30	26	8	3	202

free period in this group varied from 4 years to 30 years.

A family history of asthma was obtained in 129 cases (31%); one or other parent had asthma in 37 instances. More than one case of asthma was frequently recorded among relatives of individual patients. If other atopic conditions, such as hay fever, eczema, and allergic rhinitis are included, one can obtain a hereditary history in 45% of the cases. These figures again substantially agree with most published series. The existence of a genetic factor in asthma seems very likely; however though Viswanathan (1965) has suggested that the mode of inheritance of asthma is probably through an autosomal recessive gene, the results of extensive studies to define the mode of inheritance of asthma have been contradictory (Schwartz, 1952). It is most likely that environmental factors as well as genetic factors are necessary for the development of the overt manifestations of bronchial asthma.

All the patients were questioned about a history of allergy. Sensitivity to house dust, feathers, pollens and animal hairs was present in 40% of the cases, and multiple sensitivities were common. There was one case of asthma caused by hypersensitivity to aspirin. There were no patients with a history of food sensitivity. Though bronchial inhalation tests are considered to provide a more precise aetiological diagnosis than skin tests, (Aas, 1969), there is no doubt that when correlated with the clinical history, skin tests are frequently informative. Skin testing was carried out on 98 patients, all of whom gave a definite history of allergy and exhibited eosinophilia in the blood and/or sputum. No skin tests were carried out on any asthmatic presenting after the age of 35. Skin tests for food allergy were not carried out as these have been found to be of limited value (Chobot and Hurwitz, 1937), moreover the importance of food allergy in asthma is still very controversial (Aas, 1967). Results of skin tests showed that house dust and pollens were by far the most important allergens. One patient developed an attack of asthma

within half an hour of skin testing; she was found to be sensitive to pollen and did very well following desensitisation. Desensitisation was carried out in 54 patients and *Table II* shows the results of desensitisation treatment. Twelve patients

TABLE 2

Desensitisation in Bronchial Asthma
No. of asthmatic patients desensitised=54

<i>Results</i>	<i>No. of patients</i>
Marked improvement	12
Better	17
No improvement	25

showed marked improvement with no attacks or an occasional attack over a follow-up period of 1 to 3 years. There was a reduction in the rate and severity of the attacks in 17 patients whereas 25 showed no improvement at all. It is relevant that desensitisation treatment is only successful in a small percentage of cases; however desensitisation, especially in children, for unavoidable inhalants must always be considered, for, as Mansmann (1968) rightly points out, it is currently the only method that offers the patient any hope of basically modifying his state of hypersensitivity.

The relationship between bronchial asthma and respiratory tract infection is a close one. Ninetyfour patients claimed that the first attack of asthma followed a respiratory infection, mostly bronchitis. Moreover about 54% of the cases gave a history of recurrent chest infections. There is no doubt that an increased frequency of infections, viral and bacterial, is encountered in both childhood and adult asthmatics, who are proficient producers of mucus. The role of viral and bacterial respiratory infections in inducing a state of hyperactivity of the bronchial mucosa and muscle has been investigated (Ouellette and Reed, 1965) and experiments suggest that previous immunisation or natural exposure to infection in addition to allergens, predisposes some patients to heightened and earlier symptomatic response when exposure to the live virus or bacterial products occurs.

In asthma, it is often difficult to assess

the importance of emotional factors as in a number of cases the emotional stress is just a reaction to the asthmatic attack itself. Emotional disorders were considered to be important precipitating factors in 23% of the cases; the emotional trigger being however more prominent in females, 60 cases as compared to 36 cases in males.

Thirty eight per cent of the cases were seasonal, whilst the remaining 62 per cent were perennial. Of the seasonal cases, 60% occurred in winter, 23% with the change of season and the rest in summer. Patients often complained that the asthmatic attacks were precipitated by sudden changes of weather or sudden exposure to cold; the *scirocco* or south-east wind, which is usually very damp, was deleterious to the asthmatic. Excitement, physical exertion, inhalation of tobacco smoke, and fumes from chemicals such as kerosene were commonly mentioned as precipitating factors.

Thirtynine patients (9.3%) out of the present series were admitted in status asthmaticus. *Table III* shows the number of patients admitted to St. Luke's Hospital in status asthmaticus between the years 1964 and 1968, as well as the mortality from status asthmaticus in the same period. It shows that 56% of the cases were

over the age of 50. There were 9 deaths, giving a yearly date rate of 0.7 per 100,000 of living population; this figure does not include deaths from asthma occurring outside hospital. It is pertinent to remark here that St. Luke's Hospital is the only general hospital in the island that caters for almost all the severe medical emergencies, and therefore the death rate from asthma could if anything be only marginally higher than the figure quoted.

The corresponding figure for the U.S.A. in 1946 was 2.2 per 100,000 (Tabb. *et al.*, 1968), and 4.24 per 100,000 in the United Kingdom in 1966 (Speizer, Doll and Heaf, 1968) In the Cardiff area, which has a population very comparable to our 300,000, there were 13 confirmed deaths from status asthmaticus in 1951 (Williams, 1953). Between 1960 and 1965, there has been an increase in mortality from asthma in England and Wales (Speizer, Doll and Heaf, 1968). In Malta, as in other countries, such an increase has not been observed. The monthly distribution of cases admitted to St. Luke's Hospital with status asthmaticus is shown in *Table IV*. The lowest admission rate occurred in August and September, with the peak rates occurring in November and December.

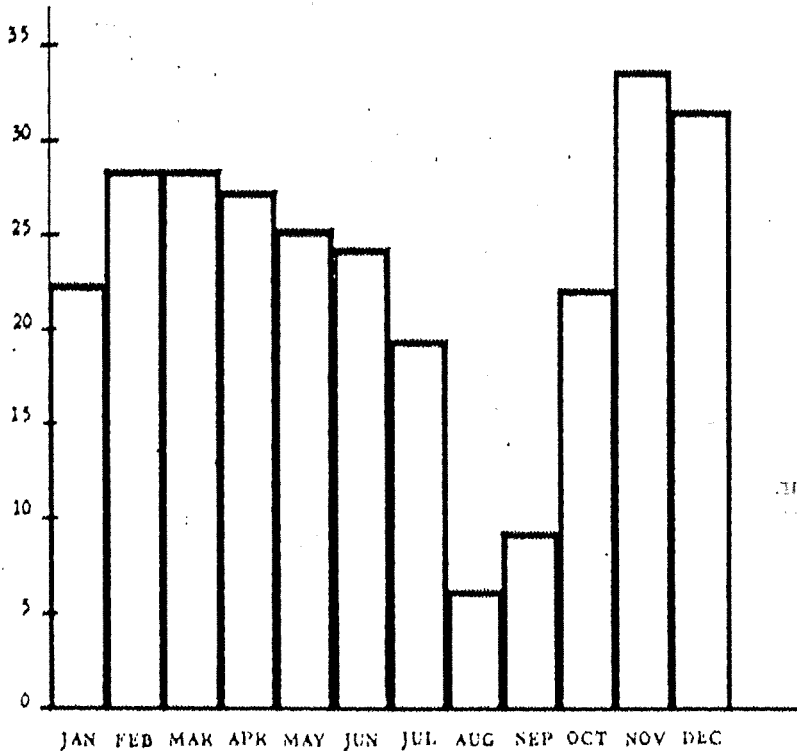
I think it would be of interest to learn

TABLE 3
Mortality
and
Distribution of Cases of Status Asthmaticus
(1964 - 1968)

Age	1964		1965		1966		1967		1968		Age, Group	Total
	M	F	M	F	M	F	M	F	M	F		
0 —	3	2	6	4	3	—	—	—	8	3		29
10 —	2	1	6	3	2	2	2	3	2	2		25
20 —	—	3	3	3	—	3	—	2	1	4		19
30 —	—	3	2	8	—	1	—	2	2	3		21
40 —	—	2	—	3	—	2	1	1	5	11		25
5/ —	4	1	4	4	6	4	13	3	13	3		55
60 —	2	6	11	2	7	5	8	6	13	3		63
70 +	2	1	5	1	1	3	5	7	9	3		37
Total/Yr	32		65		39		53		85			274
Total/Yr	M	F	M	F	M	F	M	F	M	F		Total
Per Sex	13	19	37	28	19	20	29	24	53	32		
Mortality	1	—	2	1	2	1	—	1	1	—		9

Table 4

DISTRIBUTION OF CASES OF STATUS ASTHMATICUS
PER MONTH DURING 1964-1968



how 11 British asthmatics have fared since they have taken up residence in Malta in the last three years following the introduction of tax incentives to encourage well-to-do persons to take up residence in these Islands. This is shown in *Table V*. The two adolescent female asthmatics improved; one of them was sensitive to house dust and feathers and did very well following desensitisation, the other one still suffers from attacks of asthma but they are fewer and milder. It is relevant that only 3 of the adult asthmatics showed improvement, whereas none of the patients noticed any deterioration of their asthma since coming to Malta. Those patients with associated emphysema showed no improvement at all.

Malta has for a long time been re-

TABLE 5

**Bronchial Asthma in 11 British Residents
(1964-68)**

Case	Patient	Sex	Age	Outcome
1.	F.J.	M	55	No improvement
2.	J.B.	M	56	Better
3.	K.A.	M	59	Better
4.	J.H.	M	61	No improvement
5.	J.K.	M	62	No improvement
6.	H.J.	M	64	No improvement
7.	L.B.	M	72	Slightly better
8.	J.W.	F	14	Much better
9.	H.L.	F	18	Better
10.	H.F.	F	52	Better
11.	R.W.	F	56	No improvement

commended as a health resort for invalids and since the early part of the nineteenth century, invalids — especially those with pulmonary disease — have come to winter in Malta. In his book "Notes and Observations on the Ionian Islands and Malta" published in 1842, John Davy, brother of the inventor of the miner's safety lamp, who happened to be Inspector General of Army Hospitals, wrote that the climate in Malta may be beneficial to the invalid suffering from chronic bronchitis or "from some obscure affection of the lung coming under the vague designation of asthma". Penry Williams in his "Recollection of Malta, Sicily, and the Continent" published in 1847, also recommended Malta for the invalid as being at least equal, if not superior, to most other health resorts in the South of Europe.

I think one can confidently advise the asthmatic patient who plans to come to Malta that his condition may or may not improve but it is unlikely to get worse.

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