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INCIDENCE OF MITRAL VALVULAR DISEASE IN THE ELDERLY

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Rheumatic heart disease is usually regarded as a condition which occurs mainly in young subjects. There have, however, been several reports of the occurrence of mitral stenosis in elderly patients after rheumatic disease many years previously (White and Bland, 1941; Cookson, 1949; Appel and Kossmann, 1951; Hebbert and Rankin, 1954; Johnson, 1959).

In these reports possible factors prolonging life in such patients have been discussed, and it has been stressed that women may rear large families despite this disability. Nevertheless, from none of these studies is it possible to obtain an estimate of the relative frequency of mitral-valve disease in persons over the age of 50 or 60. During the last few months we have been impressed by the number of elderly patients admitted to this hospital and found to have rheumatic heart disease with

involvement of the mitral valve. We therefore decided to study the incidence of such disease of the mitral valve in different age-groups in this hospital; in an attempt to determine its relative frequency in persons in the later years of life.

Methods

The incidence of rheumatic disease of the mitral valve in patients dying in this hospital has been investigated by examination of consecutive post-mortem reports. We studied the records of 1,000 patients over 59 years of age, 500 patients aged between 40 and 59 years, and 250 patients between 20 and 39 years of age who died in the years 1947–58. In each of these groups we discovered between 22 and 32 patients with disease of the mitral valve which the pathologist, Dr. J. L. Edwards, considered to be of rheumatic origin. In all cases the valve cusps were thickened and deformed, with shortening of the chordae tendineae. In almost all specimens there was obvious stenosis of the valve and many were calcified.

Sheffield Royal Hospital is a general hospital for acute cases in which, over the past 11 years, necropsies have been carried out on 66% of the patients who died. There are approximately equal numbers of medical and surgical beds but no accommodation for the chronic sick or for patients with gynaecological or obstetrical complaints. Cardiac surgery is not carried out, and hence we believe that there is no special tendency for patients with mitral stenosis to be referred here. We have compared our findings with the figures given by the Registrar-General (1958) for deaths due to rheumatic disease of the mitral valve in England and Wales in 1957.

Results

Twenty-two cases of rheumatic disease of the mitral valve were found in 1,000 consecutive post-mortem studies of patients aged 60 or more. The incidence of disease of the mitral valve in patients aged 40 to 59 years was 6.4% and in patients aged 20 to 39 years it was 12.4% (Table I). In the older age-group the condition was found four times more frequently in females than in males, whereas in the younger patients mitral disease was approximately twice as common in females. In each age-group, and in both sexes, the incidence of mitral-valve disease found in this hospital was two or three times as great as that reported by the Registrar-General.

In our series the proportion of male patients dying from all causes was somewhat greater than that occurring in the Registrar-General's report and the proportion of younger patients was higher in our series (Table II).

Of the 22 patients aged 60 years or more who had mitral-valve disease, 15 were aged 60–69, six were 70–79, and one was 81. In 16 of the 22 patients the cardiac condition was diagnosed in life. However, the cardiac lesion seemed to be the primary cause of death in only

TABLE I.—Incidence of Rheumatic Mitral Valve Disease Found at Post-mortem Examination of Patients Dying in the Sheffield Royal Hospital

Age of Patient (Years)	Period of Survey	All Cases			Male			Female		
		Total	Mitral Disease		Total	Mitral Disease		Total	Mitral Disease	
			No.	%		No.	%		No.	%
60+	1958–1953	1,000	22	2.2 (0.7)	630	6	1.0 (0.5)	370	16	4.3 (1.0)
40–59	1958–1953	500	32	6.4 (2.8)	320	17	5.3 (1.6)	180	15	8.3 (4.8)
20–39	1958–1947	250	31	12.4 (4.6)	158	13	8.2 (2.9)	92	18	19.6 (7.7)

Figures in parentheses refer to the percentages reported by the Registrar-General for 1957.

TABLE II.—*Characteristics of the Population in Which the Patients With Mitral-valve Diseases Were Found (Registrar-General's Figures in Parentheses)*

Age in Years	Ratio Males/ Females All Patients	Percentage of all Patients in Each Age-Group	
		Males	Females
All ages	1.7 (1.1)	66.7 (76.6)	69.5 (84.5)
60+	1.6 (1.0)	28.8 (20.1)	25.7 (13.1)
40-59	1.8 (1.6)	4.5 (3.3)	4.8 (2.4)
20-39	1.6 (1.4)		

12 of the 22 patients. Of these 12, four died of congestive heart failure, two of pulmonary oedema, four after cerebral, aortic, or pulmonary emboli, and two after thrombosis of the pulmonary artery. Of the 10 patients in whom death did not appear to be directly attributable to the cardiac disease, six died shortly after surgical operations, one had a haematemesis from a gastric ulcer, one a myocardial infarct, one Hodgkin's disease, and one a cerebral thrombosis.

Sixteen of these elderly patients were female. Records were not complete in every case, but at least seven of them had borne children, one patient having had five offspring. Of the 15 patients about whom information was available, only two had had symptoms attributable to their mitral disease before the age of 50. Six of these 22 patients were known never to have been oedematous, but only two were in sinus rhythm a few weeks before death.

Discussion

We were surprised to find an incidence of rheumatic mitral-valve disease of 2.2% in patients dying in this hospital at 60 years of age or more. This confirms the impression of other authors that the condition is not so rare in the elderly as has been supposed. The discrepancy between our figures and those of the Registrar-General may be attributed to several factors. A relatively small proportion of old people die in a general hospital for acute cases, which is more likely to admit patients with congestive cardiac failure than with more chronic conditions. This produces an artificial elevation of the incidence of patients dying of mitral-valve disease in hospital. On the other hand, in a quarter of our elderly patients the diagnosis was not made before death; all but one of these patients were admitted to a surgical ward. It seems likely that the proportion of undiagnosed cases of mitral-valve disease is even higher in patients dying at home. Death in the elderly patient with mitral disease is often due to unrelated conditions, and mitral-valve disease would therefore not be the certified cause of death. For these reasons we believe that the incidence of rheumatic disease of the mitral valve in the elderly is much higher than that reported by the Registrar-General.

However, the Registrar-General's figures for the incidence of mitral-valve disease in younger patients are probably substantially correct, since such patients are less likely to die from intercurrent disease or to remain undiagnosed. The higher incidence which we found is probably due to the high proportion of these patients who died in hospital.

Summary

Of 1,000 consecutive necropsies on patients aged 60 years and over who died in the Sheffield Royal Hospital, 2.2% showed evidence of rheumatic disease of the mitral valve. The incidence in patients aged 40 to 59 was 6.4% and in patients aged 20 to 39 it was 12.4%.

The figures were shown to be higher than those of the Registrar-General for 1957. The possible reasons for this discrepancy are discussed.

We thank Dr. J. L. Edwards for allowing us to study his post-mortem reports and for helpful criticism. We also thank the physicians and surgeons of the Sheffield Royal Hospital for allowing us access to the records of their patients.

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IPRONIAZID IN TREATMENT OF ANGINA OF EFFORT

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Iproniazid ("marsilid"), a derivative of isoniazid, was found to benefit patients with angina pectoris by Cesarman (1957), who claimed that complete relief from pain was produced in all of 41 patients studied. Subsequent reports have been conflicting, and the extent and nature of the side-effects have proved formidable. However, the early promise of the drug and the suggestion of a fundamentally different mode of action from the commonly used vasodilators were the reasons for this clinical trial, which was begun soon after the favourable report, and before the extent of the toxicity of the drug had become apparent.

The results are present of a controlled assessment of iproniazid in 51 patients with cardiac pain of effort.

Material and Methods

The methods employed were similar to those described previously (Fife *et al.*, 1957, 1958). Of the 51 patients included, 44 were men and 7 women. Their ages ranged from 37 to 65 years, averaging 54; 36 were in the age-group 45-60.

All patients gave a convincing history of angina of effort. Where dyspepsia was a feature, barium-meal examination (with particular search for hiatus hernia) and cholecystogram were performed. If any doubts on diagnosis remained, the patient was excluded from the trial. Evidence of myocardial infarction within the previous six months, and of anaemia or other debilitating disease, were also grounds for exclusion.

A 12-lead electrocardiogram was done in every case, and, if it was normal, six selected leads were taken after exercise to the point of inducing chest pain or tightness. Forty-one patients had electrocardiographic evidence of myocardial ischaemia while resting, and 10 of these had Q-wave evidence of previous myocardial infarction. Of the 10 patients with a normal electrocardiogram at rest, six had transient ST-T abnormalities after exercise. Particular attention was paid to the four with normal