INCIDENCE OF GASTRIC AND DUODENAL ULCER IN THE ROYAL NAVY IN 1955

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In a previous paper (Baron and Vaughan Jones, 1958) we discussed the difficulties of estimating the prevalence of gastric and duodenal ulcer. We concluded, as had Doll (1952), that a population survey was the method of choice, and we studied the whole British Army of 1955. We later studied the Royal Air Force of 1955 (Baron and Vaughan Jones, 1960) and we present here the data on the third armed service. In 1955 there were 122,903 men (officers and other ranks) in the Royal Navy including the Royal Marines. We have analysed the morbidity from peptic ulcer diagnosed that year for the first time.

METHODS

In 1955, diagnoses of gastric duodenal or peptic ulceration were made in 377 naval personnel. There were errors of coding in 28 cases, but the remaining 349 documents (92.6 per cent.) were examined. A total of 76 was excluded as the initial diagnosis had been made before 1955.

The remaining 273 men were admitted to hospital in 1955 for the first time with a diagnosis of peptic ulcer. In 36 patients the diagnosis was presumptive, in nine because they had not had a barium meal, and in 27 because the results were negative. The remaining 237 patients were considered to have had proven ulcers according to the criteria used in the previous papers:

- (1) 186 duodenal and seventeen gastric ulcers were shown by barium meal to the satisfaction of the radiologist concerned. Three patients (1.3 per cent.) had both gastric and duodenal ulcers.
- (2) Nineteen duodenal and eight gastric ulcers were found at laparotomy to have perforated.
- (3) Two duodenal ulcers were found at laparotomy for haematemesis.
- (4) Five duodenal and two gastric ulcers were found at elective gastric surgery.
- (5) Neither gastroscopy nor autopsy contributed to this series.

In some cases the diagnosis was established by more than one method in the course of the year, so that the total of the above groups (245) is more than the number of patients (237) considered to have proven ulcers.

The three patients with ulcers in both the stomach and the duodenum are omitted from further consideration. We have analysed the remaining 234 patients by age at diagnosis, by frequency of presentation with perforation, and by attack rates as calculated from average figures for officers and men of the Royal Navy in 1955.

RESULTS

Table I shows the number of ulcers diagnosed, the ratio of duodenal to gastric ulcers, and the attack rates per 1,000 men at different ages. The number and proportions of ulcers which presented by perforation are shown in Table II.

INCIDENCE OF DUODENAL ULCER

The overall incidence of newly-diagnosed duodenal ulcers was 1.7 per 1,000 men. The attack rate rose to a maximum in the 35 to 39-year age group. The overall incidence and distribution were similar to that in the British Army and Royal Air Force, with the peak incidence less than one-tenth of the civilian ulcer incidence.

DUODENAL/GASTRIC RATIO

Table I shows that the ratio of duodenal to gastric ulcers in all age groups was 8 : 1. This figure is similar to that in the British Army in 1955 (7.65 : 1) and lower than that in the Royal Air Force (12.4 : 1).

The ratio under 45 years of age in the present series is 8.9 : 1, similar to the British Army (8.2 : 1) and lower than the Royal Air Force (12.7 : 1).

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TABLE I
NUMBER OF CASES, DUODENAL/GASTRIC RATIO, AND ATTACK RATES BY AGE

Age (yrs)	Number of Men	No. of Ulcers Diagnosed		Ratio Duodenal : Gastric	Annual Incidence per 1,000 Men		
		Duodenal	Gastric		Duodenal Ulcer	Gastric Ulcer	Either
15-19	26,131	21	2	10.5 : 1	0.8	0.08	0.9
20-24	49,819	98	15	6.5 : 1	2.0	0.30	2.3
25-29	20,885	47	1	47.0 : 1	2.3	0.05	2.3
30-34	9,670	13	1	13.0 : 1	1.3	0.10	1.4
35-39	8,557	20	3	6.7 : 1	2.3	0.35	2.7
40-44	4,625	5	1	5.0 : 1	1.1	0.21	1.3
45+	3,216	4	3	1.3 : 1	1.2	0.93	2.2
All Ages	122,903	208	26	8.0 : 1	1.7	0.21	1.9

TABLE II
NUMBER AND PERCENTAGE OF ULCERS WHICH PRESENTED BY PERFORATION, BY AGE

Age (yrs)	Duodenal			Gastric		
	Total Diagnosed	Perforated		Total Diagnosed	Perforated	
		Number	Per Cent.		Number	Per Cent.
15-19	21	1	5	2	2	100
20-24	98	6	6	15	4	27
25-29	47	7	15	1	0	—
30-34	13	1	8	1	0	—
35-39	20	3	15	3	0	—
40-44	5	0	—	1	1	100
45+	4	1	25	3	1	33
All Ages	208	19	9	26	8	31

PERFORATED ULCERS

Table II shows that 9 per cent. of duodenal ulcers and 31 per cent. of gastric ulcers presented with perforation, figures similar to those in the Army and Royal Air Force.

NAVY/ARMY/AIR FORCE DIFFERENCES

There are no major differences in the incidence of peptic ulcer between the Army and the Navy. The Royal Air Force has a significantly lower incidence of gastric ulcer, and therefore a higher duodenal/gastric ratio than either of the other two services. It was suggested in our previous article (Baron and Vaughan Jones, 1960) that this difference might be related to social and educational differences in the

composition of the Army and Air Force. It is therefore most interesting that the incidence of gastric ulcer in the Royal Navy resembles that in the British Army rather than that in the Royal Air Force.

SUMMARY

All in-patient case summaries of peptic, gastric, and duodenal ulcer patients in the Royal Navy in 1955 were sought, and 92.6 per cent. were examined and assessed. In 1955, 208 duodenal and 22 gastric ulcers were diagnosed for the first time in approximately 123,000 male personnel of the Royal Navy. The overall incidence rates of duodenal and gastric ulcers were 1.7 and 0.2 per 1,000 men respectively. Attack rates were estimated in the various age groups for proven gastric and duodenal ulceration, together with the proportions presenting by perforation. The results are in general similar to the other services, but the incidence of gastric ulcer is the same as in the Army, and double that in the Royal Air Force.

We are indebted to the Medical Director-General of the Royal Navy for making available to us the relevant medical records, and for his permission to publish.

REFERENCES

- Baron, J. H., and Jones, R. Vaughan (1958). *Brit. J. prev. soc. Med.*, **12**, 71.
 — (1960). *Ibid.*, **14**, 44.
 Doll, R. (1952). In "Modern Trends in Gastro-enterology", ed. F. Avery Jones, p. 361. Butterworth, London.