

# Reporting on reports— cardiological intervention in elderly patients

**ABSTRACT**—We asked consultant cardiologists and geriatricians in the Trent Region to assess the change in attitude towards cardiological investigations in the elderly over the last five years. We then reviewed data from three cardiothoracic centres to see if this change was reflected in the number of invasive cardiological procedures performed. The consultants' opinion that more elderly patients are being referred for and receiving more investigations and treatment was reflected in a disproportionate increase in cardiac catheterisations and revascularisation procedures in the elderly between 1990 and 1993. There is little to suggest that these changes came about as the result of the College report on cardiological intervention in elderly patients.

In July 1991 the Royal College of Physicians of London published the report of a working group on cardiological intervention in elderly patients [1]. The group urged purchasing authorities to take account of the growing numbers of elderly patients who require specialist cardiological services; non-invasive diagnostic facilities, pacing and thrombolytic therapy were to be available to all patients regardless of age, and invasive investigations and heart surgery should be available for suitably selected patients who, although elderly, were otherwise fit to withstand the procedures.

How far the areas highlighted in the document have influenced clinical opinion is difficult to measure. The aims of this study were to find out whether there has been a change in attitude towards investigation and treatment of cardiological problems in the elderly and whether this has resulted in an increased provision of the services to patients over the age of 75 years.

## Methods

The investigation was carried out in two parts. The first was a postal questionnaire sent to geriatricians and cardiologists within the Trent Region. The second part involved the collection and analysis of data from three regional cardiothoracic centres.

### Postal questionnaire

A questionnaire was sent to all consultant cardiologists and consultant geriatricians in the Trent Region. They were asked whether they knew of the existence of the

RCP document, about referral practices over the last five years and their perception of the likelihood of cardiological investigation and intervention by angioplasty or surgery in elderly patients compared with five years ago.

### Procedures

We contacted three regional cardiothoracic centres requesting computerised records of the number of coronary angiograms, coronary angioplasties (PTCA), permanent pacemaker implantations, coronary artery bypass graft (CABG) operations and cardiac valve operations performed over the last five years, stratified according to age. We received records from Wythenshawe Hospital Manchester, Bristol Royal Infirmary and also data from the whole of Trent Region, comprising surgical data from Leicester and Sheffield, and cardiac catheterisation and pacemaker data from Leicester, Sheffield and Nottingham.

### Analysis of data

Information from cardiothoracic centres was stratified into three age bands: less than 65 years, 65–74 years and 75 years and over. Changes in the number of procedures performed were analysed by using  $\chi^2$  tests.

## Results

### Questionnaire

Of the 25 consultant cardiologists in the Trent Region, 22 replied (88% response rate) and of the 58 consultant geriatricians, 48 replied (83%). Sixteen (73%) cardiologists and 23 (48%) geriatricians worked in teaching hospitals, the remainder in district general hospitals. Only 11 (52%) cardiologists and 23 (48%) geriatricians were aware of the Royal College of Physicians recommendations, and of these 9 (41%) cardiologists and 14 (29%) geriatricians had read the document. All the cardiologists said that the document had not altered their practice.

**Thrombolytic therapy.** None of the cardiologists had an age-related coronary care unit admission policy, but three (6%) geriatricians worked in hospitals where there were age restrictions on admission to the coronary care unit. One cardiologist and one geriatrician performed an age-related thrombolytic policy.

**Cardiology referrals in the elderly.** When asked to compare their current work with that of five years ago, 18 (82%) cardiologists said they were seeing more patients over

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75 years old, 16 (76%) said they were seeing more 70–74 year olds and 11 (50%) were seeing more 65–69 year old patients.

In their current practice, 10 (47%) cardiologists said they were referring more elderly patients (over 65 years) for exercise testing and 13 (59%) were more likely to perform coronary angiography in elderly patients, 15 (68%) were requesting more echocardiograms for valve assessment and 14 (62%) more for evaluation of heart failure.

*Intervention in the elderly.* Compared with five years ago, 14 (63%) cardiologists said they were now implanting more complex pacemakers in patients over 65 years old; 16 (78%) cardiologists referred more elderly patients for valve replacement; 14 (63%) referred more for surgical revascularisation; and 12 (54%) performed more angioplasty in elderly patients.

*Priority.* When asked what priority the cardiologists would give to a patient over 65 years old for surgery compared with a clinically similar patient under 65 years, five (23%) admitted they would give the older patient a lower priority.

*Geriatricians' opinions.* By comparison, when asked to compare their current workload with that of five years ago, 29 (60%) of the geriatricians thought they were seeing more patients over 75 years old with cardiovascular problems; 19 (40%) more 70–74 year olds and 11 (23%) more 65–69 year old patients; 26 (54%) said that they referred more patients over 65 for exercise testing and 37 (77%) referred more for coronary angiography; 41 (85%) requested more echocardiograms in patients over 75 years for evaluation of valve disease and 39 (81%) more for evaluation of heart failure; 29 (60%) referred more patients over 65 years for pacemakers, 33 (69%) more patients for valve replacements.

In summary, both geriatricians and cardiologists thought they were seeing more elderly patients in all age ranges but especially in the over 70 year group. The majority of geriatricians and cardiologists said they were referring more patients for cardiac investigations and were already referring more patients for interventions, such as coronary angioplasty and CABG.

#### Procedures performed

Table 1 shows the number of cardiac catheterisations in each of the three age groups in the three centres studied over the last few years. In each centre the number of catheterisations in the over 75 year olds increased at a rate significantly greater than in the other age groups ( $p < 0.001$  for Bristol and Trent,  $p < 0.005$  for Wythenshawe).

Table 2 shows similar data for PTCA. The numbers performed in the over 75 year old group were too small to allow statistical evaluation.

The data for permanent pacemaker implantation

**Table 1. Annual number of coronary angiograms**

Age	1988	1989	1990	1991	1992	1993
<b>Wythenshawe</b>						
< 65			1,409	1,758	1,842	2,226
65–74			251	327	377	520
75+			32	37	47	79
<b>Bristol</b>						
< 65	119	410	360	494	660	522
65–74	38	145	112	94	198	187
75+	4	23	16	13	25	34
<b>Trent</b>						
< 65		1,862	2,261	2,632	2,955	2,981
65–74		418	609	761	839	965
75+		31	75	113	123	170

**Table 2. Annual number of coronary angioplasty procedures**

Age	1988	1989	1990	1991	1992	1993
<b>Wythenshawe</b>						
< 65			259	227	241	285
65–74			23	39	37	47
75+			6	2	2	5
<b>Bristol</b>						
< 65	47	51	49	66	95	136
65–74	5	5	7	15	16	33
75+	0	1	3	4	3	5
<b>Trent</b>						
< 65		114	209	276	370	525
65–74		25	39	49	79	114
75+		1	3	12	9	25

are shown in Table 3. On the whole, the numbers steadily increased each year in each of the age groups but the Bristol data showed a significantly slower increase in the over 75s ( $p < 0.01$ ).

Table 4 shows the data for coronary artery surgery. The number of procedures performed in the over 75 year old group was small but in Trent and Wythenshawe the annual increase was significantly greater in the over 65 and over 75 year old groups combined, compared with younger patients ( $p < 0.001$  for Trent and  $p < 0.005$  for Wythenshawe).

The number of valve operations performed in each group is shown in Table 5. In Bristol, the increase was

**Table 3. Annual number of permanent pacemaker implantations**

Age	1988	1989	1990	1991	1992	1993
<b>Wythenshawe</b>						
< 65			18	79	118	71
65-74			11	93	110	70
75+			33	208	229	137
<b>Bristol</b>						
< 65	17	21	21	43	56	30
65-74	26	32	40	39	44	52
75+	70	107	90	96	114	96
<b>Trent</b>						
< 65		131	143	197	209	232
65-74		170	191	246	275	333
75+		293	362	527	533	636

**Table 4. Annual number of coronary artery bypass operations**

Age	1988	1989	1990	1991	1992	1993
<b>Wythenshawe</b>						
< 65			611	657	643	653
65-74			122	166	171	206
75+			17	7	13	18
<b>Bristol</b>						
< 65	189	208	232	284	367	282
65-74	40	71	71	89	120	126
75+	3	4	4	3	10	6
<b>Trent</b>						
< 65		579	682	792	748	793
65-74		133	197	271	245	348
75+		10	10	18	16	45

greatest in the group aged 65-74 ( $p < 0.0001$ ). In Trent, the increase was greatest in the group aged over 75 years ( $p < 0.005$ ) but in Wythenshawe there was no significant difference.

## Discussion

The response rate to the questionnaire was good from both geriatricians and cardiologists. The information gleaned from this questionnaire is representative at least of practice in the Trent Region. Only half of those who responded were aware of the Royal College of Physicians recommendations and fewer still had actually read the document. The results show that both sets of physicians have the impression that they are seeing more elderly patients with cardiac problems and furthermore that these patients were more likely to be referred for intervention than five years ago. This impression is borne out by analysis of the data from Trent, Wythenshawe and Bristol which shows that since 1990 there has been a significantly greater increase in the number of cardiac catheterisations and revascularisation procedures in older patients than in younger patients.

This should be compared with the lack of an age-related increase in referral for cardiac pacemaking and valve surgery. These latter procedures are indicated by clear cut clinical entities, eg blackouts and documented heartblock. Coronary interventions on the other hand are indicated most commonly for failed medical therapy which demands a judgement by both the patient and the clinician. When does medical treatment for angina fail? Clearly, if patients restrict their life style sufficiently, angina of effort is unlikely to occur. Thus, elderly patients with reduced mobility are

**Table 5. Annual number of cardiac valve operations**

Age	1988	1989	1990	1991	1992	1993
<b>Wythenshawe</b>						
< 65			134	160	153	154
65-74			70	94	84	86
75+			15	18	19	22
<b>Bristol</b>						
< 65	130	118	113	93	102	89
65-74	28	60	73	71	70	86
75+	17	25	41	15	20	12
<b>Trent</b>						
< 65		238	279	318	343	304
65-74		113	157	183	193	225
75+		23	32	36	61	65

unlikely to suffer from angina unless it is so severe as to be precipitated even by activities of daily living like washing and dressing. The evidence from the regional centres strongly suggests that more elderly patients are now referred for intervention. Is this a consequence of patient demands or more liberal physician attitudes to cardiology in the elderly? We cannot comment on the former but our questionnaire certainly supports the latter.

The consultants' workload data for 1993 show that many more elderly patients were seen than previously. This occurred after the publication of the College

report. However, it is hard to imagine that the report was responsible for this change when only half of the cardiologists and geriatricians were even aware of it and none of those that had read it felt it had altered their practice.

In conclusion, cardiological services are more accessible for elderly patients but the reasons for this are not clear.

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#### **Reference**

- 1 Cardiological intervention in elderly patients. Report of a working group of the Royal College of Physicians. *J R Coll Physicians London* 1991;25:197-205.

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## MANAGEMENT OF STABLE ANGINA

*Edited by David de Bono and Anthony Hopkins*

Angina is the symptom affecting 2% of the population aged over 30 years and nearly 5% of men aged between 40 and 65 years. The ischaemic heart disease which it reflects, is a major cause of morbidity and mortality. It is clear that there are widespread differences in the ways in which angina is investigated and treated. To facilitate the process of audit of care in this common condition, and as a step towards the establishment of clinical guidelines, the joint audit committee of the British Cardiac Society and the Royal College of Physicians of London set up a workshop to investigate clinical guidelines and audit points in the management of stable angina.

This book reflects the outcome of the workshop. It discusses both the pathophysiology of angina and its epidemiology and describes approaches to the investigation, management and treatment of stable angina. The different papers represent a wide variety of viewpoints, from general practice through district hospitals to teaching centres. Nevertheless, the summary indicates the considerable degree of uniformity which underlies the current approach to the management of angina, and is intended to facilitate local discussion and to establish unit based guidelines and audit standards.

Purchasers of health care, both fundholding general practitioners and district health authorities, will be specifying more precisely what services they expect their patients to receive. They will find this book valuable, as will cardiologists, general practitioners and those in training who will also find in its pages useful reviews of the effectiveness of their practice.

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**Pathophysiology of ischaemic heart disease • Incidence and prognosis of angina • Prevalence of angina in the community • What a general practitioner wants from a referral service for suspected angina • Structured assessment of patients with symptomatic angina pectoris in general practice and in hospital • Coronary arteriography in the management of the patient with suspected angina • What can cardiac intervention achieve? • What happens in a district general hospital in the United Kingdom • Role of myocardial perfusion imaging in coronary artery disease • The district general hospital and its relationship to the specialist cardiac centre • What happens in a specialist cardiac centre • Differences in referral patterns for coronary angiography in one health region in the UK • Audit in cardiological practice • Minimum data sets for angina: a necessary basis for audit • Investigation and management of stable angina: a summary •**

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