**Cattedra di Nefrologia,
Università' di Catanzaro,
Italy**
Alfredo Caglioti, *assistant*
Ciro Esposito, *research doctor*
Giorgio Fuiano, *associate*
professor

**Istituto di Medicina Interna
e Nefrologia, Università' di
Parma**
Carlo Buzio, *associate*
professor

**Centro di Fisiologia Clinica
CNR, Reggio Calabria**
Maurizio Postorino,
research doctor

**Unità' di Dialisi,
Sant'Angelo dei Lombardi**
Teresa Rampino, *assistant*

**Cattedra di Nefrologia,
Prima Facoltà' di
Medicina, Università' di
Napoli**
Giuseppe Conte, *professor*

**Cattedra di Nefrologia,
Università' di Pavia**
Antonio Dal Canton,
professor

Clinical data on all patients according to whether they had cysts and renal disease. Results are means (and SD)

	All patients		Non-renal patients		Renal patients	
	Without cysts	With cysts	Without cysts	With cysts	Without cysts	With cysts
No of cases	1263	263	1053	188	210	75
Age (years)	54.5 (16.2)	64.9 (12.2)*	52.5 (16.1)	65.8 (11.6)*	48.4 (17.2)	62.7 (13.3)*
Sex (M:F)	551:712	163:100*	463:590	120:68*	88:122	43:32*
Hypertensive patients: % (SD)	23.1 (3)	37.2 (4)*	21.2 (2)	33.0 (5)*	29.0 (5)	49.3 (5)*
No	292	98	223	62	61	37
Systolic blood pressure (mm Hg)	143.7 (25)	155.0 (24)*	141.2 (25)	156.2 (24)*	146.6 (26)	153.8 (24)*
Diastolic blood pressure (mm Hg)	85.6 (13)	91.2 (12)*	84.5 (13)	91.2 (13)*	88.3 (13)	91.4 (11)*
Flank pain: % (SD)	29.4 (4)	28.9 (4)	22.0 (3)	23.9 (3)	39.0 (7)	42.0 (6)
No	371	76	232	45	82	32
Red blood cells ($\times 10^9/l$)	4.418 (0.76)	4.433 (0.78)	4.42 (0.75)	4.409 (0.77)	4.504 (0.60)	4.497 (0.82)
Gross haematuria: % (SD)	11.5 (2)	10.9 (2)	8.0 (2)	8.0 (3)	26.0 (4)	18.6 (4)
No	145	28	84	15	49	14
Microscopic haematuria: % (SD)	27.9 (4)	29.4 (4)	19.0 (3)	26.0 (4)	28.0 (5)	36.0 (5)
No	352	77	200	49	59	27
Proteinuria: % (SD)	24.4 (3)	28.9 (3)	23.0 (3)	26.0 (4)	28.0 (5)	36.0 (5)
No	308	76	242	49	59	27
No of renal cysts		2.2 (1.4)		2.2 (2.2)		2.2 (1.9)
Maximum diameter of cysts		2.8 (1.5)		2.8 (1.7)		2.8 (1.6)

* $p < 0.01$ v respective control group: the sex difference persisted in aged ranked subgroups but blood pressure differences did not.

to assess variables with a normal distribution, while χ^2 analysis was used for non-parametric dichotomous variables.⁴

The results are summarised in the table. The overall prevalence of simple renal cysts was 17.2% ($n=263$), the prevalence, number, and maximum diameter increasing progressively with the patients' age ($p < 0.001$). The overall prevalence of simple renal cysts was higher in men than in women (22.8% v 12.3%). This sex difference was significant in age ranked subgroups and increased with age (from 7.1% in men v 4.5% in women in the 18-45 years group to 46.1% in men v 23.3% in women in the >75 years group). Interestingly, neither the prevalence of past symptoms nor that of proteinuria and microscopic haematuria differed in patients with and without simple renal cysts, and the red blood cell count was also the same in both groups. However, more patients with simple renal cysts had had hypertension, and hospital blood pressure recordings were indeed higher in this group, although these differences did not hold in age ranked subgroups. Cysts were more prevalent in renal (26.3%) than in non-renal patients (15.1%), a finding independent of age.

Comment

Our study shows that the prevalence of hypertension, flank pain, erythrocytosis, haematuria, and proteinuria is not increased in patients with simple renal cysts, and

therefore, the association of these symptoms with simple renal cysts has to be considered merely coincidental. This conclusion demands that the cause-effect relation between simple renal cysts and any symptoms be specifically proved, at least by excluding other possible causes through appropriate diagnostic procedures. In the case of proteinuria and haematuria these may include urography or morphological studies of urinary red cells, together with renal biopsy.

Our findings cannot explain the higher overall prevalence of simple renal cysts in men. The very high prevalence in older men, however, suggests that partial urinary obstruction due to prostatic hypertrophy might be a factor favouring the development of simple renal cysts, as observed in experimental models of renal cystic disease.⁵ Similarly, tubular obstruction secondary to renal parenchymal disorganisation may account for the higher prevalence in patients with renal and urinary tract disease.

- 1 Gardner KD, Evan AP. Cystic kidneys: an enigma evolves. *Am J Kidney Dis* 1984;3:403-13.
- 2 Dalton D, Neiman H, Grayhack JT. The natural history of simple renal cysts: a preliminary study. *J Urol* 1986;135:905-8.
- 3 Luescher TF, Wanner C, Siegenthaler W, Vetter W. Simple renal cyst and hypertension: cause or coincidence? *Clin Nephrol* 1986;26:91-5.
- 4 Norusis MJ. In: *Statistical Package for the Social Sciences*. Chicago, Illinois: SPSS Inc, 1986.
- 5 Gardner JR. Cystic kidneys. *Kidney Int* 1988;33:610-21.

(Accepted 25 November 1992)

Analysis of national register of Down's syndrome in England and Wales: trends in prenatal diagnosis, 1989-91

David E Mutton, Roy Ide, Eva Alberman, Martin Bobrow

Correspondence to:
Mr Mutton.

BMJ 1993;306:431-2

The national Down syndrome cytogenetic register¹ is thought to contain details of over 95% of cases of Down's syndrome in England and Wales. This register now comprises three full years' data (1989 to 1991) on 3274 cases. We report trends in prenatal diagnoses over these years and the indications leading to these diagnoses.

Methods and results

The methods of data collection and processing have been described previously; the information collected includes the result of fetal karyotyping, reason for requesting karyotyping, and mother's age.¹ All fetuses that are lost naturally are excluded from this analysis. For this study, when tests of mothers' serum were the basis for referral the type of tests used were ascertained. Measurements of α fetoprotein concentrations alone or with one other serum test have been classed as α fetoprotein tests. The use of three serum tests together with mother's age to calculate risk has been classed as a triple test.

The proportion of all cases of trisomy 21 diagnosed cytogenetically before birth rose from 321/1077 (30%) in 1989 to 423/1115 (38%) in 1991. The table shows the number of diagnoses of trisomy 21 stratified by age and, when appropriate, the indication for prenatal diagnosis. The commonest reason for requesting karyo-

**Department of
Epidemiology and Medical
Statistics, London
Hospital Medical College
at QMW, London E1 4NS**
David E Mutton, *research
fellow*
Roy Ide, *data manager*

**Wolfson Institute of
Preventive Medicine, St
Bartholomew's Hospital
Medical College, London
EC1M 6BQ**
Eva Alberman, *professor
emeritus*

**Paediatric Research Unit,
Division of Medical and
Molecular Genetics,
United Medical and
Dental Schools of Guy's
and St Thomas's Hospitals,
London SE1 9RT**
Martin Bobrow, *Prince
Philip professor of paediatric
research*

typing was the mother's age. The proportion of cases that were diagnosed prenatally among mothers aged ≥ 35 rose only slightly from 270/454 (59%) in 1989 to 296/488 (61%) in 1990 to 320/515 (62%) in 1991. The corresponding proportion among mothers < 35 rose more sharply from 51/623 (8%) to 78/594 (13%) to 103/600 (17%).

The proportion of prenatal diagnoses that followed detection of abnormal concentrations on maternal serum testing rose steadily from 17/321 (5%) to 50/374 (13%) to 90/423 (21%) (representing 2%, 5%, and 8% of all cytogenetic diagnoses) in 1989, 1990, and 1991. The proportion of these diagnoses that followed a triple test rose from 2/17 (12%) to 13/50 (26%) to 51/90 (57%).

For mothers aged < 35 the proportion of prenatal diagnoses after serum screening was 12/51 (24%), 24/78 (31%), and 39/103 (38%) (2%, 4%, and 7% of all cytogenetic diagnoses in younger mothers) in 1989, 1990, and 1991. For mothers ≥ 35 the corresponding proportions were 5/270 (2%), 26/296 (9%), and 51/320 (16%) (1%, 5%, and 10% of all diagnoses in older women). The proportions among the older mothers rose more steeply than those among the younger mothers over the three years.

Abnormal ultrasound scans in early pregnancy and in mid-trimester leading to a prenatal diagnosis of trisomy 21 increased from 1989 to 1991, from 23 to 33 cases for scans before 20 weeks' gestation and from 34 to 71 cases for scans before 28 weeks' gestation (table).

Numbers (percentages) of diagnoses of trisomy 21 in England and Wales from 1989 to 1991 stratified by mother's age. Prenatal diagnoses also stratified by reason for referral

Reason for referral	1989		1990		1991	
	Age < 35	Age ≥ 35	Age < 35	Age ≥ 35	Age < 35	Age ≥ 35
<i>Prenatal diagnoses</i>						
Result of maternal serum test:						
Triple test	1 (2)	1 (<1)	5 (6)	8 (3)	17 (17)	34 (11)
α Fetoprotein test*	11 (22)	4 (1)	19 (24)	18 (6)	22 (21)	17 (5)
Result of ultrasonography:						
< 20 Weeks' gestation	16 (31)	7 (3)	19 (24)	5 (2)	20 (19)	13 (4)†
20-27 Weeks' gestation	10 (20)	1 (<1)	13 (17)	4 (1)	23 (22)‡	15 (5)
≥ 28 Weeks' gestation	5 (10)	1 (<1)	10 (13)	4 (1)	10 (10)	9 (3)
Maternal age		252 (93)	4 (5)	252 (85)	4 (4)	224 (70)
Other reasons	8 (16)	4 (1)	8 (10)	5 (2)	7 (7)	8 (3)
Total	51 (100)	270 (100)	78 (100)	296 (100)	103 (100)	320 (100)
<i>Postnatal diagnoses§</i>						
	572	184	516	192	497	195
<i>All diagnoses</i>						
	623	454	594	488	600	515
Total	1077		1082		1115	

*Alone or with one other serum test.

†Includes a pair of twins discordant for abnormal ultrasound scan.

‡Includes one case for which maternal age was not known.

§Includes cases for which maternal age was not known distributed proportionally (57 in 1989, 65 in 1990, 149 in 1991) and stillbirths.

Of diagnoses made after 28 weeks, only one was recorded as leading to termination. A large proportion of the ultrasound assessments named an anomaly detected. These included fetal ascites or hydrops (19 cases); cystic hygroma or nuchal fold (38); and cardiovascular (20), renal (8), and bowel (12) anomalies.

Comment

The growing use of serum screening and ultrasound examination seems to be improving prenatal screening for Down's syndrome. In 1991 results of serum tests and ultrasonography before 28 weeks' gestation together made up 38% of the indications leading to a prenatal karyotypic confirmation of fetal trisomy 21. They accounted for 80% of the prenatal diagnoses in mothers under 35 and 25% of such diagnoses in older women, for whom maternal age is still the most common indication although in these the use of serum screening is increasing.²

In our results the proportion of diagnoses occurring after maternal serum screening rose faster in older than younger mothers. Our findings also point to the increasing importance of fetal ultrasonography in the prenatal diagnosis of fetal trisomy 21. Some anomalies, like fetal hydrops, relate to the current condition of the fetus³ while others, like cardiovascular abnormalities, are of considerable importance in predicting the future condition of the fetus.⁴

This project is funded by the Medical Research Council. It is made possible by the collaboration of cytogeneticists, their colleagues, and referring clinicians, whom we thank. We also thank Margaret Madders for help in entering the data.

The collaborating cytogeneticists were: Dr J Wolstenholme, Newcastle upon Tyne; Dr C M Clarke, Cleveland; Dr E J Tawn, Sellafield; Mr J Williams, Leeds; Dr D P Duckett, Leicester; Dr C A Parkin, Nottingham; Mrs I C S Barnes, Sheffield; Mr J Pearson, Norwich; Mrs M E Ferguson-Smith, Cambridge; Dr M A C Ridler, Harrow; Dr D Rooney, London; Mr E D G Davies, London; Mr R Meredith, London; Mr L J Butler, London; Dr M Lucas, London; Dr M Daker, London; Mr B H Pritchard, Dover; Dr John W Taylor, London; Miss Carol Brooker, Croydon; Mr R Ede, Chichester; Ms Sheila Youings, Salisbury; Mrs M Fitchett, Oxford; Dr A McDermott, Bristol; Mr T James, Stoke on Trent; Professor M A Hultén, Birmingham; Mr M Griffiths, Birmingham; Mr P J Howard, Liverpool; Dr T Andrews, Manchester; Dr S J Fennell, Manchester; Dr M R Creasy, Cardiff.

1 Mutton DE, Alberman E, Ide R, Bobrow M. Results of first year (1989) of a national register of Down's syndrome in England and Wales. *BMJ* 1991;303:1295-7.

2 Wald N, Wald K, Smith D. The extent of Down's syndrome screening in Britain in 1991. *Lancet* 1992;340:494.

3 Boyd PA, Keeling JW. Fetal hydrops. *J Med Genet* 1992;29:91-7.

4 Cullen S, Sharland GK, Allan LD, Sullivan ID. Potential impact of population screening for prenatal diagnosis of congenital heart disease. *Arch Dis Child* 1992;67:775-8.

(Accepted 9 December 1992)

ONE HUNDRED YEARS AGO

MEAT EATING AND BAD TEMPER.

One deplorable result of excessive meat eating in England is the ill-temper which is a chronic complaint among us. "In no country," declares Mrs. Ernest Hart in the *Hospital*, "is home rendered so unhappy and life made so miserable by the ill-temper of those who are obliged to live together as in England. If we compare domestic life and manners in England with those of other countries where meat does not form such an integral article of diet, a notable improvement will be remarked. In less meat-eating France urbanity is the rule of the home; in fish- and rice-eating Japan harsh words are unknown, and an exquisite politeness to one another prevails even among the children who play together in the streets. In Japan

I never heard rude angry words spoken by any but Englishmen. I am strongly of opinion that the ill-temper of the English is caused in a great measure by a too abundant meat dietary combined with a sedentary life. The half oxidised products of albumen circulating in the blood produce both mental and moral disturbances. Brain workers should live sparingly if they would work well and live long. Their force is required for mental exertion, and should not be expended on the task of digestion, for 'they should remember that the digestion of heavy meals involves a great expenditure of nerve force.' The healthful thing to do is to lead an active and unselfish life, on a moderate diet, sufficient to maintain strength and not increase weight." (*BMJ* 1893;i:1125.)