	Bone area (%)	Osteoid perimeter (%)	Mineralising perimeter (%)	Rate of formation of bone ($\mu\text{m}^2/\mu\text{m/day}$)
Women with breast cancer:				
Receiving tamoxifen	23.2 (19.25-5)	16.7 (9.9-24.2)	3.7 (2.7-6.4)	0.028 (0.02-0.036)*
Not receiving tamoxifen	20.9 (18.5-24.3)	14.3 (10.9-17.9)	4.5 (3.3-9.1)	0.049 (0.027-0.066)*
Normal women ¹	20.8 (14-30)	12.8 (7-25)	6.1 (0.5-8)	0.038 (0.003-0.068)

*Women with breast cancer receiving tamoxifen v not receiving tamoxifen, $p=0.05$. All other comparisons not significant.

had received two separate doses of demeclocycline, and a venous blood sample was taken. Bone histomorphometry was performed by image analysis. The rate of formation of bone was calculated as the rate of mineral apposition $\times$ (half the surface single labelled with demeclocycline+all the double labelled surface (expressed as a percentage of the total surface)).⁴ The groups were compared with the Mann-Whitney test.

The median age of the women taking tamoxifen was 56 (range 40-70) and the time since the menopause 6 (0-25) years. The control group's median age was 64 (46-69) and the time since the menopause 15 (0-29) years. These values were not significantly different between the groups. Median body weight, however, was significantly higher in the women taking tamoxifen (68.9 kg) than in the controls (61.4 kg) ($p<0.02$). The median serum alkaline phosphatase concentration in the women taking tamoxifen was 60.0 (interquartile range 53-68) U/l compared with 86.5 (68-110) U/l in the controls ($p<0.005$). There were no significant differences in serum concentrations of urea, electrolytes, calcium, phosphate, bilirubin, alanine aminotransferase, or parathyroid hormone. The median rate of tissue based bone formation in the patients treated with tamoxifen was lower than that in the controls (table). There were no significant differences between the groups in bone area, osteoid perimeter, or mineralising perimeter (table), and 95% of these values lay within the ranges reported for normal postmenopausal women.⁵

Comment

These results show that long term tamoxifen treatment does not adversely affect bone turnover in women

with breast cancer. The preservation of normal trabecular bone area in our patients is consistent with most densitometric data, which indicate either neutral or oestrogenic effects of tamoxifen on bone.² The significantly lower median serum alkaline phosphatase concentration in the women treated with tamoxifen is consistent with an oestrogenic effect of the drug since none of the women had demonstrable hepatic or skeletal metastases at the time of bone biopsy. The lower rate of tissue based bone formation in these patients is also consistent with this hypothesis: if tamoxifen had antioestrogenic effects an increased rate of bone formation would be expected.

Our results thus provide the first direct evidence that tamoxifen does not have antioestrogenic effects on bone in postmenopausal women and indicate a possible oestrogenic effect.

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Prevalence of symptoms in patients with simple renal cysts

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A few anecdotal reports have indicated simple renal cysts as a possible cause of hypertension, flank pain, macroscopic haematuria, and erythrocytosis.¹⁻³ Many physicians also believe that simple renal cysts commonly cause microscopic haematuria and mild proteinuria. The frequency of association of simple renal cysts with any of these symptoms, however, has never been the object of controlled epidemiological study, and certain important questions therefore lack definite answers. For example, should further diagnostic procedures (such as renal biopsy) be performed, after simple renal cysts are found in a patient with mild proteinuria or microscopic haematuria? Is the prevalence of flank pain or macroscopic haematuria in patients with simple renal cysts so high as to justify invasive procedures (such as removal by surgery or the application of alcohol)?

Methods and results

Simple renal cysts were defined as one or a few cysts of 0.2 cm in diameter or more that did not result from adult polycystic disease, medullary cystic disease, or pyelogenic cysts. The diagnosis was based on ultrasonography.

In our cooperative study, in five general hospitals, renal ultrasonography was scheduled in 1526 consecutive patients who had been referred to the ultrasound service for any abdominal examination. Patients aged under 18, bedridden patients, and patients with renal failure or a history of kidney transplantation were excluded. Two hundred and eighty four patients were classed as renal patients because the disease causing admission—as recorded on their official case sheet—was renal or related to the urinary tract; the remaining 1243 were classed as non-renal patients.

Medical data were recorded shortly before the renal ultrasonographic examination, and included age, sex, admission diagnosis, and a history of episodes of colicky pain or tenderness in the flank, macroscopic haematuria, and hypertension. The renal ultrasonographic findings were recorded by the radiologist and included renal cysts—their site, number, and diameter. Urine analysis, a red blood cell count, and blood pressure were also routinely recorded.

Analysis of variance and an unpaired t test were used

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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.

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

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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-