number of deaths from cancer of the breast and thereby reduce the estimated underrecording. Both this study and that of Heasman and Lipworth[3] suggest that the figures derived from death certificates for deaths from cancer of the breast in the United Kingdom present a reasonably accurate picture.

The second objective of this study was to ascertain the proportion of patients who die from other causes but have signs of cancer of the breast at death. The first row of table II shows that just under half of the patients who do not die from cancer of the breast fall into this category. With two exceptions, however, the deaths studied occurred within 21 years of the first treatment because the cancer registry records began in 1960. In an unselected series of patients with breast cancer treated during 1947-50 Brinkley and Haybittle found that about 11% survived beyond 21 years and that of those surviving for 20-30 years only 30% died from cancer of the breast.[6] The patients in the present study were treated in the period 1960-80. Haybittle found that the survival curve for patients treated during 1960-71 was above that for the 1947-50 series by about 5% at 15 years[7]; thus a 21 year survival of about 16% might be expected in the period from which our patients were drawn. This being so, 36 deaths occurring more than 21 years after treatment would be necessary to complete the picture in the present study (two of these were included). If we assume that the proportion of deaths from cancer of the breast after 20-30 years observed by Brinkley and Haybittle may be applied to all deaths after 21 years,[6] then 11 of the later deaths might be expected to be from cancer of the breast, leaving 25 attributable to other causes. In the present study, of the eight patients dying from other causes 10-21 years after treatment, two had cancer of the breast present. If we assume that this ratio persists throughout further follow up we would expect six of the 25 patients dying from other causes after 21 years to have cancer of the breast present. The estimated final allocation of deaths is as shown in the second row of table II.

The figure of 74% for deaths from cancer of the breast is higher than the 65% derived from the figures for national incidence and mortality (figure). Some of the difference (2-4%) can be accounted for by the small underrecording of deaths from cancer of the breast found both in this study and by Heasman and Lipworth.[3] Another small part (3% at the most) may be due to the assumption that the proportion of deaths due to cancer of the breast remains constant after 20 years, when in fact it probably falls as other causes of death increasingly take their toll. Moreover, the size of the sample means that our estimate of 74% has a lower 95% confidence limit of 68%. Thus our results accord with the national mortality and incidence data.

Our other finding was that the proportion of those dying from other causes who had overt signs of breast cancer at death was quite high (21 out of 58 in the second row of table II), which suggests that only 16% of patients may experience "personal" cure. The difference between the national figures for registrations and deaths from cancer of the breast is, therefore, likely to be a considerable overestimate of the number of patients who remain free of symptoms of their breast cancer before dying from another cause; it cannot be assumed to represent a group who have been cured.

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SHORT REPORTS

Intermittent self catheterisation in adults

In 1972 Lapides *et al* showed that self catheterisation was a safe and effective way of managing patients with a neuropathic or atonic bladder.[1] Since then it has been used widely in children with incontinence associated with spinal dysraphism[2,3] and occasionally in adults.[4] By completely emptying the bladder catheterisation improves a dilated upper urinary tract even in the presence of reflux and infection. We reported our results in children in 1978[5] and now present our experience in adults.

Patients, methods, and results

We studied 45 women and one man with bladder dysfunction aged 17-86 (table). Most of them had difficulty in voiding and retained a large amount of residual urine. Patients were taught how to use a stainless steel or plastic catheter while lying down and with the help of a mirror. Sometimes we used a Bruijnen-Boar catheter, which is designed for self catheterisation and has a mirror attached (Thackray, UK). Patients soon learnt to catheterise themselves while standing in front of the lavatory or sitting well back on the seat. They catheterised themselves at least four times daily. Catheters were washed after use and either boiled or kept in sodium hypochlorite solution. A video was available for teaching outpatients, who were given the doctor's home telephone number in case they wanted advice. Our policy was to treat urinary infections only if the patient had symptoms. Chemoprophylaxis was used for five patients.

Nine patients failed from the start and six abandoned the method because they found it unpleasant or too difficult or remained wet. Two reserved the catheter for use in the event of acute retention. Twenty nine patients continued self catheterisation, of whom seven resumed acceptably normal voiding. Febrile urinary infections were exceptional once the bladder was being

Details of patients attempting self catheterisation

Condition	Catheterising: Continued (n = 22)	Discontinued (n = 9)	Failed (n = 15)	Total (n = 46)	Mean age (years)
Intervertebral disc lesions	2	1	4	7	37
Spina bifida	6	1	2	9	34
Spinal trauma	2		2	4	33
Spinal tumour	1	2		3	56
Meningitis	1			1	69
Transverse myelitis		1	1	2	56
Spinal artery occlusion		1		1	19
Paget's disease		1		1	73
Cerebral palsy		1	1	2	24
Multiple sclerosis	2		1	3	43
Diabetic neuropathy	2			2	49
Systemic lupus erythematosus	1			1	66
Atonic bladder	4	1	2	7	70
Pelvic conditions	1		2	3	50

completely and frequently emptied. Forty eight per cent of specimens showed pyuria and bacteriuria before the start of intermittent self catheterisation and 42% thereafter. Sixteen patients were followed up for from one to 22 years (mean 3·4 years). Ten remained radiologically and functionally normal. Five showed damage (three with hydronephrosis and two with scarring) that had been present at the start. One woman, an insulin dependent diabetic aged 73, developed slight impairment of renal function.

Discussion

We did not usually recommend intermittent self catheterisation for men because of the increased risk of trauma, false passage, stricture, and epididymo-orchitis. In women, however, if catheterisation proved unhelpful it was stopped without irreversible effects; if it was successful the results were immediate. A severely arthritic woman who had previously had to void six times at night could sleep undisturbed after removing a litre of residual urine. A young girl, recently paraplegic, was delighted to discard her indwelling catheter tubing and bag to wear her usual clothes again. A woman with multiple sclerosis succeeded in self catheterisation despite intention tremor, visual impairment, and instability of her back when balancing on the lavatory.

The remarkable determination of some of these patients arose from the handicap imposed by incontinence, severe urinary infections, and episodes of acute retention. Some had been admitted to hospital frequently and had had numerous investigations and multiple operations. Once self catheterisation was established admissions to hospital stopped. Later problems were mainly iatrogenic from efforts to maintain a sterile urine. Unnecessary administration and frequent changes of antibiotics aroused anxiety, and forcing fluids sometimes caused incontinence. We found that bacteriuria was less common in those patients who inserted the catheter frequently in order to stay dry even when they also restricted their fluids. The long term results of self catheterisation in adults are not known, but the short term results can be rewarding.

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Department of Urology, Addenbrooke's Hospital, Cambridge CB2 2QQ
GILLIAN M HUNT, MB, DCH, honorary clinical assistant
R H WHITAKER, MCHIR, FRCS, consultant urologist
P T DOYLE, FRCS, consultant urologist

Correspondence to: Mr R H Whitaker.

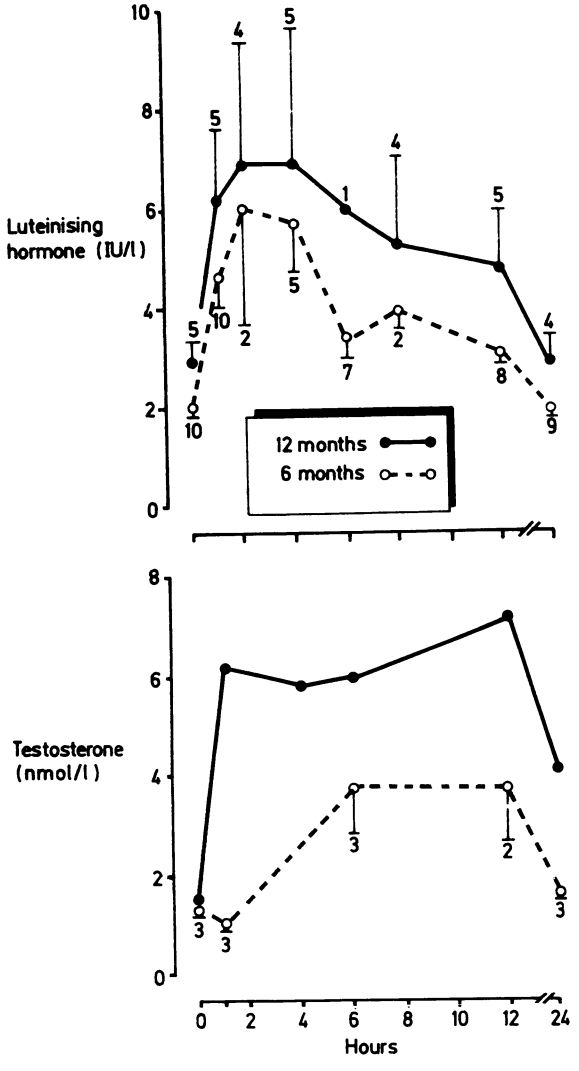
Failure of long term luteinising hormone releasing hormone treatment for prostatic cancer to suppress serum luteinising hormone and testosterone

Administration of luteinising hormone releasing hormone analogues to patients with cancer of the prostate results in stimulation followed by depression of the regulation of pituitary receptors with a fall in serum luteinising hormone and testosterone concentrations. Castrate testosterone concentration is achieved within 21 days. We have previously reported our satisfactory initial experience of using the luteinising hormone releasing hormone analogue ICI 118630 in the treatment of 10 patients with advanced metastatic carcinoma of the prostate.[1] We now report a longer clinical and endocrine follow up of 15 patients.

Case reports

Fifteen patients with prostatic cancer received 250 μg of the luteinising hormone releasing hormone analogue twice daily subcutaneously for one week and thereafter 250 μg daily. They were followed for a mean of 12·7 months (range 1-23 months). Clinical response was assessed according to the criteria of the British Prostate Group.[2] One patient died at one month without responding. At four months responses were complete for three, partial for eight, and stable for three. Six patients subsequently relapsed, two from each response group. These six were free from progression for a mean of 9·5 months. The remaining patients have shown no evidence of progression for a mean of 12·1 months.

Serum samples were obtained before injection and at 1, 2, 4, 6, 8, 12, and 24 hours afterwards, and these were taken from 10 patients after six months of treatment and from the remaining five patients after six and twelve months. All patients showed a rise in serum luteinising hormone concentration after injection, which increased as treatment continued (figure). Three patients showed a rise in testosterone concentration above basal at 6 months and of these, one was also studied at 12 months (figure). Three patients with a rise in testosterone had evidence of disease progression. Of the nine patients with no rise in testosterone, only one showed disease progression.



Mean (SEM) serum luteinising hormone and testosterone concentrations before (0 hour) and after injection with 250 μg of luteinising hormone releasing hormone analogue ICI 118630 at six and 12 months. Each point represents the number of patients from whom samples were taken.

Conversion: SI to traditional units—Testosterone: 1 nmol/l ≈ 0·3 ng/ml.

Comment

The primary response of 14 of the 15 patients compares favourably with the findings of other studies using conventional endocrine treatment with oestrogens or orchidectomy, or both.[3,4] By 15 months, however, six patients had relapsed with progressive disease. Poor patient compliance accounted for one of these cases. The remaining patients had suppressed serum luteinising hormone and testosterone concentrations before their daily injection. The progressive rise in serum luteinising hormone concentration for up to eight hours after