Do patients with frank haematuria referred under the two-week rule have a higher incidence of bladder cancer?

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ABSTRACT

INTRODUCTION *The New NHS* guaranteed that everyone with suspected cancer would be able to see a specialist within 2 weeks of their GP deciding that they need to be seen urgently. We investigated whether referrals under the two-week rule for frank haematuria results in a clinically significant advantage over normal referral pathways in patients with suspected bladder cancer.

PATIENTS AND METHODS Patients referred for frank haematuria specifically under the two-week cancer rule were prospectively recorded over a 2-year period. Results of haematuria investigations were compared to a control group of routine frank haematuria referrals.

RESULTS Of the 32 patients in each group, four bladder cancers were found in the 2-week rule group and five bladder cancers were found in the control group ($P > 0.05$). The number of other demonstrable urological causes of frank haematuria was also the same in the two groups.

CONCLUSIONS The incidence of bladder cancer and other urological pathologies is the same irrespective of referral pattern. It is not clear whether seeing such patients within 2 weeks confers any clinically significant advantage over conventional referral pathways. Not all patients with macroscopic haematuria are referred or seen under the two-week rule, this has considerable clinical governance implications for all departments of urology.

KEYWORDS

Two-week rule – Haematuria – Bladder cancer

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The UK Government White Paper *The New NHS* guaranteed that everyone with suspected cancer would be able to see a specialist within 2 weeks of their general practitioner (GP) deciding that they needed to be seen urgently. These arrangements were guaranteed for everyone with suspected urological cancer from December 2000.¹ In order to facilitate referral between primary care and secondary care for patients with a suspected urological cancer, a Steering Group was established by the Department of Health to determine which factors could best discriminate between patients who do and those who do not have cancer. The preliminary recommendations of the Steering Group were published in the document *Referral guidelines for suspected cancer* the aim of which was to facilitate appropriate referral between primary and secondary care. These guidelines recommend that all patients with

macroscopic haematuria should be referred under the two-week rule, since 90% of patients with bladder cancer present in this way.² Using these criteria, it has been estimated that the average district general hospital serving a population of 200,000 would receive 700 urgent referrals for suspected bladder cancer per year or 14 referrals per week.¹ Given the resource and medicolegal implications of this guidance, we investigated whether referrals under the two-week rule results in a clinically significant advantage over normal referral pathways in patients with suspected bladder cancer.

Patients and Methods

From June 2001 to April 2003, all patients referred for frank haematuria specifically under the two-week cancer rule

Table 1 Summary of findings

	Control group (<i>n</i> = 32)	2-week rule group (<i>n</i> = 32)
Mean age (range)	64 years (35–90 years)	67 years (29–83 years)
Time to flexible cystoscopy (range)	4.5 weeks (2–9 weeks)	Within 2 weeks
Bladder tumours	5 (16%)	4 (13%)
Other demonstrable urological cause	9 (28%)	9 (28%)

were prospectively recorded. New referrals for frank haematuria with no reference to the two-week rule acted as the control group. Patient demographics and results of haematuria investigations (flexible cystoscopy, renal tract ultrasound or intravenous urography, urine cytology and urine microscopy and culture) were prospectively recorded and compared. Chi² statistical testing was used to compare rates of bladder cancers.

Results

During the study period, 62 patients were referred to the urology department with frank haematuria, of whom half were referred under the two-week rule and half referred routinely. Patient and tumour characteristics are shown in Table 1. In the two-week rule group, there were four G1pT1 tumours and in the control group, there were three G1pTa bladder tumours, one G2pT1 bladder tumour and one G2pT2 bladder tumour. There was no statistical significance between the numbers of bladder tumours detected in the two groups ($P > 0.05$, chi²). Other demonstrable urological causes of frank haematuria were six vascular, enlarged, prostate glands, two renal cell carcinomas and a renal cyst in the two-week rule group and six vascular, enlarged, prostate glands, two urethral strictures and a bladder stone in the control group.

Discussion

We found that in the 2-year period since the introduction of the two-week rule at a district general hospital, the incidence of bladder cancers detected after referral by general practitioners for frank haematuria was the same regardless of type of referral. All bladder cancers found in the two-week rule group were superficial and well differentiated. In the control group, three were superficial and well differentiated; of the remaining two, one was superficial and moderately differentiated and one was muscle invasive. It is possible that as the two-week rule group had earlier flexible cystoscopies and diagnosis, theoretically, the bladder cancers could have been detected at an earlier stage. However, since the control group had to wait only an additional mean of 2.5 weeks, we feel that this

is an unlikely factor and that the grade and stage differences detected in the two groups were coincidental. Nevertheless, we appreciate that in urological units with long waiting times, although the incidence of bladder cancer may not be altered, earlier cancer detection should lead to improved patient care.

We also found similar rates of other detectable urological causes for frank haematuria in the two groups, primarily due to benign prostatic hyperplasia. The results of both groups are similar to other studies examining frank haematuria and urological disease.⁵

Nonetheless, 56% of patients in the control group and 59% of patients in the two-week rule group had normal urinary tracts on investigation. This is in keeping with other studies that have examined patients with frank haematuria and urological disease.⁵ Extrapolating these results to the Department of Health's own figures for an average district general hospital suggests that of the 700 patients referred with macroscopic haematuria every year under the two-week rule, about 400 would have normal investigations whilst the approximately 100 with bladder cancer would not obtain any clinically significant benefit from being referred specifically within 2 weeks. Given the enormous resource implications of seeing all patients with macroscopic haematuria within 2 weeks, our results raise a number of important points.

Whilst macroscopic haematuria remains the prime referral criterion for suspected bladder cancer, it is not clear whether seeing such patients within 2 weeks confers any clinically significant advantage over conventional referral pathways. Published studies^{2,4,5} examining delays in bladder cancer diagnosis and survival remain inconclusive, possibly due to the inherent variations in patient case-mix and tumour biology in such series. On the other hand, any initiative, properly resourced, that allows all patients with macroscopic haematuria to be seen within 2 weeks should be welcomed. Furthermore, sufficient finance must also be available to support the services that are needed following the diagnosis of bladder cancer, such as radiology, theatre and oncology.⁶ Funding for cancer detection alone will not improve outcome.

It is clear from our study that not all patients with macroscopic haematuria are referred under the two-week rule, as

previously demonstrated.⁷ Therefore, using the number of patients referred under the two-week rule for bladder cancer will underestimate the true number of patients with macroscopic haematuria and consequently the true number of patients with bladder cancer. This should be borne in mind when interpreting and extrapolating data from local and national two-week rule results.

Finally, the referral guidelines for suspected cancer quote that 'failure to take due account of the contents of the guidelines could result in medicolegal complications'.¹ Given that many patients with macroscopic haematuria are not currently seen under the two-week rule, many departments of urology may need to review the clinical governance implications of their current management of patients with macroscopic haematuria.

Conclusions

Although patients referred under the two-week rule do not have a higher incidence of bladder cancer, this method of

referral will improve waiting times and ultimately enhance the patient care pathway. However, such a practice must be adequately resourced to be effective.

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