

INTRODUCTION

Upper-tract urinary cancers, here defined as cancers of the renal pelvis and of the ureter, are rare. In England about 340 cases each year are diagnosed in females, and 550 in males.

Deaths from upper-tract urinary cancers are therefore uncommon; about 70 per year in females and 90 in males in England. However, the age-standardised mortality rates have increased in both sexes since 1995 ($p < 0.001$ for both).

The increase in mortality rates has driven a decrease in survival. One-year relative survival rates in males fell from 79% in 1990-92 to 73% in 2007-09 ($p < 0.05$). Five-year relative survival in males decreased from 60% in 1990-92 to 49% in 2003-05 ($p < 0.001$); and in females decreased from 56% to 44% over the same time period ($p < 0.001$) (1).

In the current clinical situation, with ongoing scrutiny of the UK's cancer survival rates compared to Europe (2) (3), a survival which is static over time is worrying; one which is decreasing could be viewed as a failure. The purpose of this study is to examine the population-based data with a view to identifying the factors which may be responsible for changing survival.

The majority of upper-tract urinary cancers are transitional cell carcinomas (TCC) arising in the urothelium. In this sense they are very similar to bladder cancer and share the same aetiology. Specifically the risk of upper-tract urinary cancers is known to be increased by smoking and exposure to certain industrial chemicals. Reductions in smoking prevalence and the control/decline of industries associated with these chemicals have led to falling rates of incidence and mortality for bladder cancer, but have not had the same effect in upper-tract urinary cancer.

METHODS

Three areas were investigated: stage of disease at diagnosis, changing treatment options and the pathway from referral to treatment.

Stage at diagnosis for 1985-2010 were extracted from the National Cancer Data Repository (NCDR) which is held by all English Cancer Registries. The NCDR holds all diagnosed cases of cancer from 1990-2010. Cases were identified by having an ICD-10 diagnosis code of C65 (Malignant neoplasm of renal pelvis) or C66 (Malignant neoplasm of ureter).

Stage in the NCDR is known to be incomplete and so data were supplemented by the British Association of Urological Surgeons (BAUS) registry of new cancers. The BAUS registry is voluntary and hence covers about half of new urological cancers. Data were available for 1999-2009 and were linked to NCDR records by NHS number, date of diagnosis, and site.

Data on surgical treatments were obtained from Hospital Episode Statistics (HES) for 1998-2009. Relevant treatment episodes were identified using the OPCS treatment codes detailed in the results section. Data on radiotherapy were taken from the Radiotherapy Dataset (RTDS) which is available for radiotherapy treatments for 2009-2011. The treatment intention field in the RTDS was used to identify only radical radiotherapy.

Details of times from referral to treatment were taken from the national Cancer Waiting Times (CWT) dataset. Records with a confirmed ICD-10 diagnosis code of C65 or C66 were extracted. These data were available for 2009-2011.

RESULTS

Taking those tumours with a complete stage as a denominator, the proportion of cancers which are diagnosed at the most advanced stage has steadily increased (Figure 1) to the point where it is now the largest group. There has been a corresponding decrease in the proportion of cancers diagnosed at stages I and II: particularly stage I. In 2008-10 285 cases were diagnosed at stage IV, compared to 268 cases at stage I, 86 at stage II and 128 at stage III. Stage I diagnoses peaked in number for 2005-07 at 296, about 100 per year.

It is possible that there is some recording bias in this increase, as less data are required to grade a stage IV tumour. However, the increase in stage IV diagnoses without a corresponding large increase in overall completeness is indicative of a true change in stage at diagnosis towards the most advanced stage of disease.

Surgical treatment, radiotherapy and chemotherapy delivery was assessed. The trend in usage of surgical procedures is downwards (Figure 2). The numbers of patients having radiotherapy is small but the proportion also appears to have fallen over the last decade. In contrast the proportion of patients having chemotherapy appears to have risen. However there are some limitations to these data.

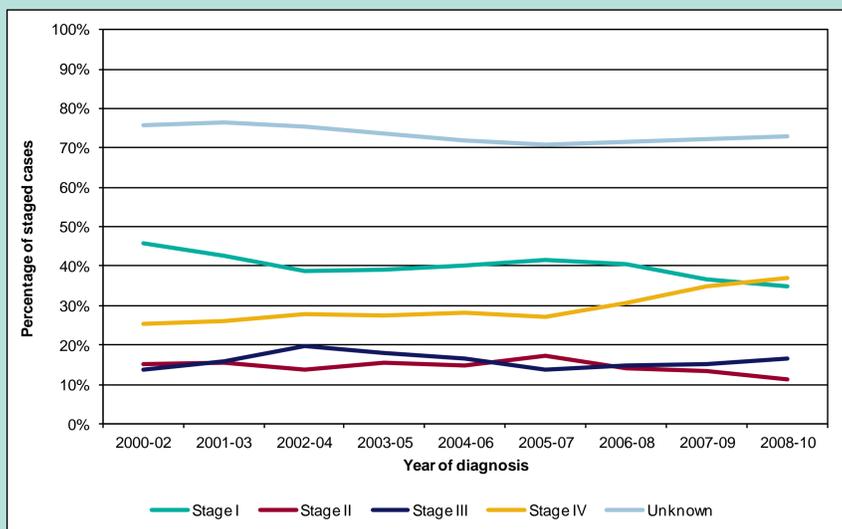


Figure 1: Stage at diagnosis of upper-tract urinary cancers, England, 2000-2010

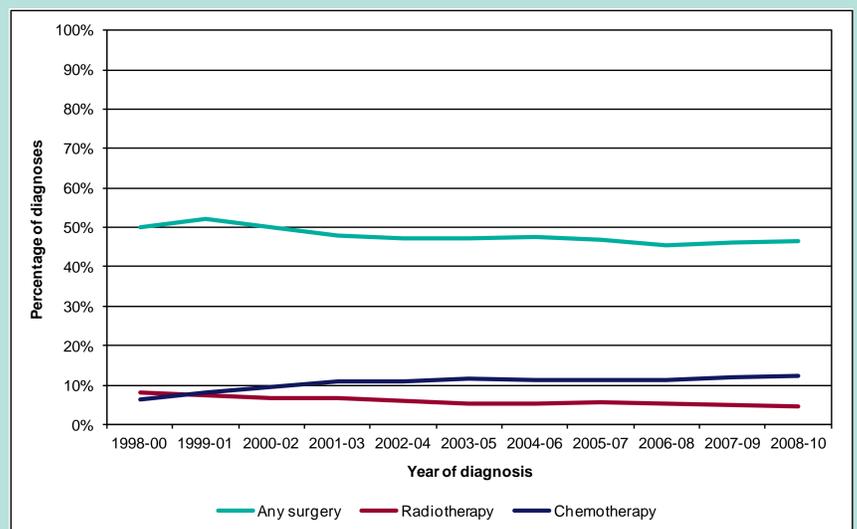


Figure 2: Trends in recorded treatments 1998-2010

Upper tract cancer patients have the longest time from referral to treatment of all urological cancers (Figure 3). On average upper tract patients referred in 2011-12 waited more than two months for treatment to commence, compared to 40 days for bladder patients.

	Prostate	Bladder	Kidney	Upper Tract	Testicular	Penile
Time from referral to first being seen (days)	11.3	10.7	9.2	8.8	7.8	9.4
Time from referral to treatment (days)	55.2	40.0	57.9	72.2	20.4	45.0

Figure 3: Time waited for hospital appointment, and treatment, for urological cancer patients. 2011-12

DISCUSSION

Overall survival from upper tract urinary cancers is decreasing in both men and women. In contrast there is little evidence that survival for specific grade or stage of disease is changing.

This suggests that the driving factor behind overall changes in survival is a trend towards more advanced disease. There are two possible reasons for this. The first is an as yet unexplained increase in aggressiveness of upper-tract urological cancers. The other is that increased use, and better sensitivity, of clinical imaging has led to cases being detected at an advanced stage that would previously have only been detected as carcinomatosis.

The decreasing uptake of surgical procedures may be related to advanced disease at presentation, as either the disease has invaded too far for surgery to be successful or it is felt that there would be little survival benefit from treatment.

Time from referral to diagnosis for upper tract cancers is longer than other urological cancers, possibly because of the symptomatic similarity of upper-tract and other urological cancers. Patients presenting with haematuria or unspecified loin pain are likely to be investigated as suspected bladder or kidney cancers and be first sent for cystoscopy or intravenous urogram.

CONCLUSIONS

- There has been a change in the presentation of upper-tract urological cancers, with a trend towards more advanced disease
- It is possible that these more advanced presentations are limiting treatment options, and hence there has been a decrease in surgical intervention
- The time between diagnosis and treatment is longer than any other urological cancer. This is likely to have an affect on outcome, and increases patient distress through long periods of waiting and uncertainty
- It is notable that the Improving Outcomes in Urological Cancers guidance (4) gives no specific advice on management of upper-tract urological cancers, and neither has there been any subsequent guidance from NICE. This means that diagnosis and treatment is likely to be variable across the country

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