key points

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Kidney cancers account for 2-3% of all adult malignancies in the UK. Men are predominantly affected by renal cancer with an average age at diagnosis of 64 years. Renal (or clear) cell carcinoma (RCC) accounts for 90% of kidney cancers. Early diagnosis improves survival with five-year survival rates for renal cancer of 70-94% for localised tumours in the UK. RCC should be suspected in the presence of localising symptoms such as flank pain, a loin mass or haematuria; constitutional upset including weight loss, pyrexia and/or night sweats; or with unexplained laboratory tests.

Smoking, obesity and hypertension are the most important and most common risk factors. Environmental exposure to asbestos, cadmium and trichloroethylene are recognised, but less common, risk factors. Patients on chronic dialysis and renal transplant recipients are at increased risk of RCC in their native kidneys. Inherited polycystic kidney disease does not appear to be a demonstrable risk factor for RCC.

If kidney cancer is suspected on history, physical examination or initial screening tests then a red flag ultrasound examination of the renal tracts should be requested. Dipstick urinalysis is of great value as asymptomatic haematuria may be the only abnormal test in the presence of non-specific symptoms such as weight loss or loin pain. Visible or non-visible haematuria, in the absence of proteinuria, suggests an underlying structural abnormality is present in the kidneys, ureters or bladder.

Surgical removal of RCCs, where feasible, may result in cure in up to 40-60% of cases. Individuals too frail for major surgery may benefit from evolving surgical approaches such as thermal ablation and cryotherapy. RCCs tend to be relatively resistant to chemotherapy or radiotherapy and this limits the usefulness of such treatments. Agents that target the VEGF (vascular endothelial growth factor) and mTOR (mammalian target of rapamycin) pathways are considered first line in the treatment of metastatic RCC. Sunitinib, now recommended by NICE, is administered orally and acts by inhibiting the VEGF receptor. Common toxicities of sunitinib include fatigue, diarrhoea, nausea, altered taste sensation, mucositis, hypothyroidism and hand-foot syndrome. More serious side effects include blood dyscrasias such as anaemia and neutropaenia, and bleeding diatheses.