Obesity linked to common form of kidney cancer and each extra BMI point increases risk

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Being obese could lead to a greater risk of developing the most common form of renal cell cancer, according to research in the January issue of the UK-based urology journal *BJUI*.

US researchers found that obese patients with kidney tumours have 48 per cent higher odds of developing a clear-cell renal cell cancer (RCC) than patients with a body mass index (BMI) of less than 30. And the odds increase by four per cent for every extra BMI point.

The team at the Memorial Sloan-Kettering Cancer Center in New York, USA, studied 1,640 patients with kidney tumours. They found that 88 per cent had malignant tumours and 61 per cent of these were clear-cell RCCs. The remaining 12 per cent had benign tumours.

When they factored in the patient's weight, they discovered that there was a significant association between obesity and clear-cell RCC, which accounts for up to 80 per cent of RCC cases and is one of the more lethal variants.

"Recent scientific breakthroughs about what causes clear-cell RCC have led to the development of new targeted therapies" says lead author Dr William T Lowrance.

"This makes it more important than ever to identify those people who

face an increased risk of developing this variant, which is on the rise in the USA.

"The widespread use of abdominal imaging has definitely contributed to increased detection of RCC, but fails to account for it entirely.

"A number of studies have suggested that obesity could be a risk factor for RCC, but the exact reason is unknown. Researchers suggest it might be secondary to hormonal changes, decreased immune function, hypertension or diabetes in obese patients."

The study looked at all patients who had undergone surgery at the Center between January 2000 and December 2007. Patients with hereditary renal cancer syndrome were excluded and BMI data was missing for a further 64, giving a study size of 1,640.

Key findings included:

- Patients had an average age of 62 years, 63 per cent were male and 88 per cent were white.
- 38 per cent of patients had a BMI of 30 or more, which is classified as obese, and this figure rose to 42 per cent in the patients with clear-cell RCC. By contrast, only 31 per cent of the patients with benign tumours were obese.
- 67 per cent of the obese patients had malignant tumours with clear-cell RCC, compared with 57 per cent of the non-obese patients.
- The rates for the other kinds of malignant tumours - including papillary, chromophobe and collecting duct - were similar

between the obese and non-obese patients.

"We also looked at other health and lifestyle factors, like diabetes, hypertension and smoking" adds Dr Lowrance. "This showed that the only other factors that were independent predictors of clear-cell RCC were male gender and tumour size."

The researchers conclude that BMI is an independent predictor of clear-cell RCC and that as BMI increases, the odds of having a clear-cell RCC also increases.

"Although we still need to find out more about the pathology of clear-cell RCC, this study is useful as it provides individual predictors of the chance of developing this form of cancer" concludes Dr Lowrance. "Of these, obesity provides the strongest association."

More information: Obesity is associated with a higher risk of clear-cell renal cell carcinoma than with other histologies. Lowrance et al. BJUI. 105, pp16-20. (January 2010). DOI:10.1111/j.1464-410X.2009.08706.x

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