



## **Safety of CT-guided Percutaneous Cryoablation for Renal Cell Carcinoma Stage cT1 in Patients with the Need for a Pre-procedural Double-J stent: An International Multicenter Study**

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### **Background**

Percutaneous cryoablation (PCA) is a minimally invasive procedure reported to have lower rates of complications than partial nephrectomy when treating renal cell carcinoma (RCC). During PCA, a double-J stent can be indicated when the tumor is located close to the ureteropelvic junction, the ureter, or the renal collecting system. However, a double-J stent can cause complications like upper urinary tract infections and intraabdominal abscesses. This study aimed to assess the safety of CT-guided PCA in patients treated for cT1 RCC who had pre-procedural a double-J stent.

### **Methods**

Patients treated between January 2016 to February 2021 at Odense University Hospital, Denmark or Uppsala University Hospital, Sweden, were included in this retrospective cohort study. Treatment decision was based on a multidisciplinary team conference. Relevant cases were identified from local databases. Patients over the age of 18 years with biopsy-verified RCC or suspected malignancy were included. All patients had a double-J stent inserted in general anesthesia prior to PCA. Complications were recorded within 30 days and graded according to the Clavien-Dindo classification. Major complications were defined as complications  $\geq$  grade 3.

### **Results**

The cohort included 61 patients with a median of age 66 (IQR, year, 55-75). The median tumor size was 33 mm (IQR 24-38), with a median RENAL score of 8 (IQR 7-10). In addition, 56% of patients received prophylactic antibiotics. A complication rate of 36% (n=22) was recorded, and major complications occurred following 10% (n=6) of the procedures. A statistically significant

association was found between the number of cryoprobes used during the ablation and complications (OR, 4.45; 95% CI, 1.46-13.57; P=0.009). In addition, no other significant associations were found.

### **Conclusions**

This study found that patients with a double-J stent in connection with PCA have a high risk of complications. However, more extensive studies, preferably with prospectively study designs, are needed.