

Abstract

In recent years, liquid biopsy for blood and body fluid in cancer patients has attracted attention. However, there have been few reports of liquid biopsy focusing on urine of pancreatic ductal adenocarcinoma (PDAC).

In 56 patients with PDAC, DNA was extracted from urine and plasma prior to treatment, and KRAS mutations were analyzed with droplet digital PCR to examine the mutation detection rate. Our study showed that KRAS mutations were found in 27 cases (48%) in urine and 27 cases (48%) in plasma. The detection rate of urine KRAS mutations varied by renal functions. The rates were 70% (14/20) and 36% (13/36) in the creatinine clearance rate (CCr) < 70 mL/min group and in the CCr ≥ 70 mL/min group, respectively (P=0.024). Whereas, no influence of the CCr was observed in the detection rates of plasma KRAS mutations. The rates were 50% (10/20) and 47% (17/36) in cases with the CCr < 70 mL/min group and the CCr ≥ 70 mL/min group, respectively.

Although the sample size was small, this study clearly indicated a new possibility of less invasive urine liquid biopsy in PDAC patient.