

# Percutaneous Transcatheter Hepatic Artery Embolization for Liver Cysts in Autosomal Dominant Polycystic Kidney Disease

## Background

We have achieved renal contraction therapy in patients with autosomal dominant polycystic kidney disease (ADPKD) by means of renal transcatheter arterial embolization (TAE) using intravascular coils, decreasing renal size and improving quality of life in almost all patients. We presently perform hepatic TAE in patients with intractable symptomatic polycystic liver.

## Study Design

Uncontrolled trial.

## Setting & Participants

30 patients with ADPKD referred for arteriography to an academic medical center. 22 patients had kidney failure treated by means of dialysis.

## Intervention

We embolized arteries supplying hepatic segments replaced by cysts that were associated with well-developed hepatic arteries, but obstructed intrahepatic portal veins.

## Outcomes & Measurements

Various volumes before and after TAE were compared by using computed tomography and National Institutes of Health Image software in 30 patients with follow-up computed tomography 18 to 37 months after therapy.

## Results

Total liver volume and total intrahepatic cyst volume decreased from  $7,882 \pm 2,916$  and  $6,677 \pm 2,978$  to  $6,041 \pm 2,282$  and  $4,625 \pm 2,299$  cm<sup>3</sup>, respectively ( $P < 0.0001$  for both). Fractions of remaining (FR) total liver volume and FR of intrahepatic cyst volume were

78.8%  $\pm$  17.6% and 70.4%  $\pm$  20.9%, respectively. Hepatic parenchyma increased from 1,205  $\pm$  250 to 1,406  $\pm$  277 cm<sup>3</sup> ( $P = 0.0004$ ). In 29 of 30 patients, both total liver volume and intrahepatic cyst volume decreased; in 1 patient, total liver volume increased from 5,755 to 7,069 cm<sup>3</sup>, whereas cysts enlarged from 4,500 to 5,531 cm<sup>3</sup>. No serious complications were experienced. In 24 patients, the post-TAE course was favorable. TAE failed to benefit 6 patients because of unrelated hepatic infection, peritonitis, hepatic failure, acute leukemia, or pelvic fracture.

## Limitations

Absence of a control group.

## Conclusions

TAE may be an option for patients with ADPKD with symptomatic polycystic liver who are not candidates for surgical treatment.

**Index Words:** Autosomal dominant polycystic kidney disease (ADPKD), transcatheter arterial embolization (TAE), intravascular treatment, percutaneous transcatheter hepatic artery embolization, polycystic liver disease