

# DIAGNOSIS OF RENAL CYST INFECTION IN ADULT POLYCYSTIC KIDNEY DISEASE (ADPKD) USING 67-GA CITRATE SPECT/CT: A CASE SERIES:

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## INTRODUCTION:

Renal cyst infection in ADPKD patients is challenging, as it can be the source of life-threatening sepsis and frequently lack localizing symptoms. Recent guidelines establish that intracystic material compatible with infection should be obtained for definite diagnosis. Gold standard imaging to do so is PET/CT, which is expensive and restrained to certain centers. We sought to determine whether 67-Gallium-citrate scintigraphy is a valuable and inexpensive alternative to orientate renal cyst infection in these patients.

N	GENDER	AGE	RRT	FEVER (C°)	ABD. PAIN	OTHER SYMPTOMS	CRP	US	CT	67-GA-C	DIAGNOSIS	ATB WEEKS	RELAPSE
1	F	72	TX	39	NO	DIARRHEA	105	COMPLEX CYST	INFECTED CYST	POSITIVE	CYST INFECTION	8	YES
2	M	43	HD	38	YES	COUGH	240	NOT DONE	HAEMORRHAGIC VS INFECTED CYST	POSITIVE	CYST INFECTION	6	NO
3	M	40	CKD	38	YES	HEMATURIA	123	COMPLEX CYST	HAEMORRHAGIC CYST	NEGATIVE	HAEMORRHAGIC CYST	1	NO
4	F	64	CKD	39	YES	DYSURIA COUGH	232	NEGATIVE	NEGATIVE	POSITIVE	CYST INFECTION	6	NO
5	F	33	PD	39	YES	DYSURIA	336	NEGATIVE	NEGATIVE	POSITIVE	CYST INFECTION	6	YES

## MATERIALS AND METHODS

Between January 2015 and January 2016 (both included), 5 patients with ADPKD were diagnosed of kidney cyst infection.

3 female and 2 male with a mean age of 50.4 ±17 years (range 32-72 years).

2 patients were on renal replacement therapy (one HD and one PD), 1 had a functioning renal transplant and 2 had CKD.

The most frequent presenting symptoms of cyst infection were fever (5) and abdominal pain (4).

## RESULTS :

Ultrasound (US) scanning of both kidneys was done in 4 patients (80%) and showed signs of cyst infection in two. One of them was later identified as an haemorrhagic cyst. (sensitivity of 33%).

Computed tomography (CT) was done in all of them and was compatible with the final diagnosis in 2: One case of cyst infection and one haemorrhagic cyst .

67-Ga-citrate SPECT/CT was positive in 4 patients (80%) and true negative in 1, **proving better sensitivity (100%) and specificity than US and CT.**

67-Ga-citrate scintigraphy :

- 1- Permitted to obtain a final diagnosis in those cases with opposite results on US and CT.
- 2- Was performed periodically and defined the length of antibiotic treatment.
3. Was used to detect a possible recurrence of the infection during the three following months.



Ga-67C SPECT/CT images showing evidence of kidney cyst infection on the patients right kidney .

## CONCLUSIONS:

In our case series, 67-Ga-citrate SPECT/CT proved a **better sensitivity and especificity than ultrasound and computed tomography with iodinated contrast.** Furthermore, it is a non invasive and inexpensive study available in most centers. It **can be used in all ADPKD patients with suspected renal cyst infection regardless of kidney function,** being more cost-effective than PET/CT.

Due to demonstrated potential as a diagnostic tool in this setting, we think it could be considered as an alternative to the PET/CT.

