

## The Clinical and Imaging Presentation of Acute “Non Complicated” Pyelonephritis: A New Profile for an Ancient Disease.

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### Abstract

#### Background

Acute pyelonephritis (APN) is differently defined according to imaging or clinical criteria. In adults information on the relationship between imaging and clinical data is lacking. Our study was aimed at analysing the relationship between the clinical and imaging presentation of APN, defined according to imaging criteria (parenchymal involvement at MR or CT scan).

#### Methods

All consecutive patients hospitalized for “non-complicated” APN were considered (June 2018-November 2020). Clinical, biochemical and imaging data at hospitalization were analyzed by univariate and logistic regression analysis.

### Results

There were 119 patients, all females, median age 32 years (15-72). At hospitalization, inflammatory markers were elevated (CRP median: 12.1 mg/dL, normal < 0.8). Incomplete presentations were frequent: fever was absent in 6.7%, pain in 17.8%, lower urinary tract symptoms in 52.9%. At CT or MR scan the lesions were bilateral in 12.6%, multiple in 79.8%; abscesses were present in 39.5%. Renal scars were found in 15.1%. Positive cultures were correlated with multiple foci (multivariate OR 4.2; CI 1.139-15.515). No other sign/symptom discriminated between small lesions, abscesses or multifocal involvement.

### Conclusions

APN is a protean disease. In the absence of strict correlation with clinical or biochemical markers, imaging studies are required to assess the severity of kidney involvement.