

Clinical characteristics of acute renal failure with severe loin pain and patchy renal vasoconstriction



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ABSTRACT

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Background: Acute renal failure (ARF) with severe loin pain and patchy renal vasoconstriction (PRV) is a syndrome presenting with sudden loin pain after anaerobic exercise. We aimed to investigate the clinical characteristics and the efficacy of diagnostic imaging studies of patients with this syndrome.

Methods: We retrospectively selected 17 patients with ARF accompanied by loin or abdominal pain who showed multiple patchy wedge-shaped delayed contrast enhancements on a computerized tomography scan. Information about the clinical characteristics, including the nature of pain and combined symptoms, suspected causes, such as exercise, drug or alcohol intake, and renal hypouricemia, and the results of laboratory and imaging tests were gathered.

Results: The mean age of patients with episodes of ARF accompanied by loin pain was 23.0 ± 6.5 (range 16–35) years old. Pain was mainly located in the loin (70.6%) or abdominal area (76.5%) and continued for approximately 3.5 ± 4.0 days. Exercise was suspected as a primary cause of disease in 12 (70.6%) patients. Maximal serum creatinine was 5.42 ± 3.16 (1.4–12.1) mg/dL 3.1 ± 1.8 (1–7) days after the onset of pain. The peak level of serum uric acid was 9.41 ± 2.91 (6.0–15.8) mg/dL. All of the patients recovered to near-normal renal function, and one patient showed hypouricemia after recovery.

Conclusion: ARF with severe loin pain and PRV can present with loin or abdominal pain, even without a history of anaerobic exercise. Careful history taking and appropriate imaging studies are critical in the diagnosis and management of this syndrome.

Table 1

Clinical characteristics of patients

ID	Age (y)	Sex	Pain			CVAT	Suspected causes or associated factors of pain				Combined symptoms			
			Loin	Back	Abdomen	Exercise	Alcohol	URI	Analgesics	Fever	Vomiting	Headache	Oliguria	
1	21	F	+	–	–	–	–	–	–	Track 800 m	–	+	+	–
2	21	M	+	–	–	–	–	–	–	Track 2000 m	–	+	–	–
3	17	M	+	–	+	Right	–	–	–	Track 1000 m	–	–	+	–
4	17	M	–	–	+	–	–	–	–	Track 1000 m	–	+	+	–
5	17	M	+	+	–	Both	–	–	–	Track 1000 m	–	+	–	–
6	17	M	+	+	+	Both	–	–	–	Track 1000 m	–	–	–	+
7	18	M	–	–	+	Right	–	–	–	Track 1000 m	–	+	–	–
8	16	M	+	–	+	Both	–	–	–	Track 200 m	–	–	+	+
9	33	M	+	+	+	Both	–	–	–	–	+	+	–	+
10	35	M	+	+	+	–	–	–	–	Running 600 m	+	–	+	–
11	23	F	–	–	+	Right	–	–	–	–	–	+	–	–
12	25	M	+	+	–	Right	–	–	–	–	–	+	–	–
13	32	M	+	+	+	Left	–	–	–	–	–	–	–	–
14	27	M	–	–	+	Both	–	–	–	Running 1 h	–	+	+	–
15	24	M	+	–	+	Both	–	–	–	Soccer 90 min	–	–	–	–
16	18	M	+	+	+	Both	–	–	–	Running 2000 m	+	–	–	–
17	30	M	–	–	+	–	–	–	–	–	–	–	–	–

Factors that were combined or not combined with the patient are expressed as + and –, respectively. Six patients (ID 1–6) were previously described [7].

CVAT, costovertebral angle tenderness; F, female; ID, patient identification number; M, male; URI, upper respiratory infections.