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Comparison of clinical characteristics of acute kidney injury in patients with glyphosate and glufosinate herbicide poisoning

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Objectives: This study aimed to investigate the clinical characteristics of acute kidney injury in patients with glyphosate and glufosinate herbicide poisoning.

Methods: From 2008 to 2019, 230 patients admitted to our hospital after glyphosate or glufosinate herbicide poisoning. We compared the clinical characteristics of acute kidney injury (AKI) in patients with glyphosate (n=173) and glufosinate (n=57) herbicide poisoning.

Results: The patients included 155 men and 75 women with a mean age of 59 years (range, 22 to 101 years). There were no differences in the clinical characteristics between glyphosate and glufosinate poisoning except for serum bicarbonate and intensive care unit admission. The serum bicarbonate level was lower in glufosinate intoxication than in glyphosate intoxication (19.8 ± 4.5 vs. 21.5 ± 3.9 , $p < 0.01$). In comparison with patients of glyphosate poisoning, patients of glufosinate poisoning experienced intubation (59.6% vs. 19.7%, $p < 0.01$) and intensive care unit (ICU) admission (68.4% vs. 38.2%, $p < 0.01$) more frequently. The overall incidence of AKI was 38.3% in this study, and there was no difference between two groups (35.8% vs. 45.6%, $p = 0.123$)

Conclusions: Patients with glufosinate intoxication showed more severe type of clinical manifestation and ICU admission rates than glyphosate intoxication.