



Renal tubular injury by glyphosate-based herbicide

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Received: 29 July 2020 / Accepted: 21 August 2020 / Published online: 1 September 2020
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Keywords Acute kidney injury · Glyphosate · Herbicide · Mitochondrial toxicity

A 78-year-old woman was admitted to our hospital with acute kidney injury (AKI), which developed 5 days after suicidal glyphosate-based herbicide (GBH) ingestion. She had oliguria with renal impairment (serum creatinine level 12.9 mg/dL). Vigorous hydration could not resolve her oliguria, and hemodialysis treatment was initiated. Histological examination of renal needle biopsy found tubular injury, which was prominent in proximal tubules, but no apparent glomerular abnormalities (Fig. 1). The presented proximal tubular epithelial vacuolar degeneration was observed throughout the biopsy specimens. After 3 weeks of hemodialysis treatment, her renal function recovered gradually, and she discharged dialysis independently.

Although considered to be minimally toxic to human, GBH-poisoning presents several symptoms including AKI [1]. The AKI is attributed to hypovolemic shock by the surfactant ingredients of GBH [2]. However, the renal histology of epithelial injury in proximal tubules, the mitochondria-abundant nephron segment, indicated participation of the glyphosate mitochondrial toxicity in the AKI [3].

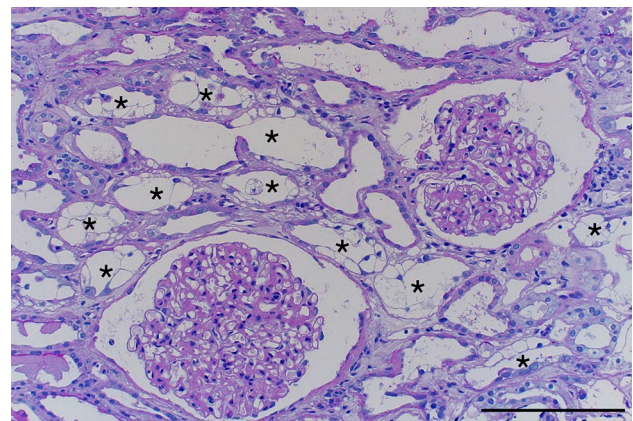


Fig. 1 Light microscopic image of renal biopsy specimen showing epithelial damage, which is prominent in proximal tubules (asterisks). Periodic acid–Schiff stain, Scale bar 100 μm

Informed consent Informed consent was obtained from the patient.

Compliance with ethical standards

Conflict of interest The authors have declared that there is no conflict of interest.

Research involving human participants and/or animals This article does not contain any studies with human participants or animals performed by any of the authors.

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