

A Case of Glyphosate Poisoning- Successful Application of HA230 Hemoadsorption Cartridge

Dr Sudipto Chakraborty* & Dr Dhiman Sen

Apollo Multispecialty Hospitals, Kolkata, India.

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ABSTRACT

Glyphosate is the most commonly used non-selective, broad-spectrum herbicide in the world. Toxicity of Glyphosate is supposed to be due to uncoupling of oxidative phosphorylation and the surfactant polyoxyethylene amine (POEA) - mediated cardiotoxicity. Clinical features of this herbicide poisoning are varied, ranging from asymptomatic to even death. HA230 is one of the few adsorption hemoperfusion cartridge filters where solutes are removed by direct binding of solute materials. 36-year old lady, with unfortunate history of medical termination of Pregnancy 1 month back presented with alleged history of 400ml of agricultural herbicide Glyphosate ingestion 18 h back. On complete evaluation, she was found to have acute kidney injury with hyperkalemia, acute liver injury, respiratory depression and myocardial depression. She was treated conservatively with IV Fluids, IV Antibiotics, IV Calcium gluconate and Insulin-Dextrose, IV Noradrenaline and was put under invasive ventilation. Continuous Renal Replacement Therapy was started along with toxin removal cartridge HA230. She improved dramatically and had complete recovery within 3 days and has now returned to her normal life.

Although traditionally regarded as minimally toxic, Severe Glyphosate poisoning has shown to be refractory to the most intensive supportive care. The triad of metabolic acidosis, hyperkalemia and pulmonary edema has shown to have fatal outcome despite early recognition and aggressive treatment. There have been various studies for the efficacy of HA230 in various poisoning cases. Studies by Shi et al for paraquat poisoning patients; Bo and Dong et al on acute severe Organophosphate poisoning has shown use of HA230 is associated with better outcome as compared to standard or conservative therapy. There has been a reported case of positive outcome of a patient of Deltamethrin poisoning, an insecticide following use of HA230 in Vietnam. Use of HA230 for Glyphosate poisoning is the first of its kind according to our knowledge.

Corresponding author: Dr Sudipto Chakraborty, Apollo Multispecialty hospitals, Kolkata, India, E-mail: sudipto.ipgmer@gmail.com

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