

Oral Abstracts

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HERBAL TREATMENT AND SUB-ACUTE ARSENIC POISONING - VIGILANCE, MANAGEMENT AND LESSON LEARNT

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Objectives:

1. Arsenic poisoning can occur in patients after prolonged exposure to herbal medicine containing high level of arsenic
2. Patients may present with clinical features of both acute and chronic arsenic poisoning
3. Clinicians should be vigilant and confirm the source of exposure

Methods: Realgar (As₄S₄) is used for treatment of skin disorders in Chinese medicine. We report here an outbreak of subacute arsenic poisoning following prolonged use of high dose realgar-containing anti-psoriasis pills.

Results: Thirty-one patients were exposed to realgar-containing folk medicine for a mean duration of 132.9 days (range: 7 – 1098 days). On average, each pill contains 9385 µg inorganic arsenic and 1.4 µg mercury. The estimated mean inorganic arsenic exposure was 259.8 µg/day (range: 90.6 – 494.5 µg/day). Acute toxicities were not uncommon. Eighteen (58%) experienced nausea and vomiting; thirteen (42%) had significant weight loss of 20 or more pounds; and 10 (32%) experienced transient facial edema. Features of chronic poisoning were found in 65% of patients. Twenty (65%) had melanosis / spotted hypopigmentation of skin; Nine (29%) had keratosis, mainly over the palmar and plantar regions; Eighteen (58%) complained of numbness and paresthesia of palms and soles. Six (19%) developed motor neuropathy, four of those with severe weakness affecting activities of daily living. One patient developed lower limbs edema, transudative ascites, and hepatosplenomegaly with CT scan showing features of Budd Chiari syndrome. Among 11 patients tested with nerve conduction study, sensorimotor neuropathy was supported in 5 (45%) patients. Haematological abnormalities were also common. Seventeen (55%) had macrocytosis (<98 fL); Six (19%) had mild leucopenia (<4.0 x10⁹ /L); two (6%) had anaemia. Seventy-three percent of patients had elevated arsenic levels adjusted with creatinine in spot urine samples (> 5 µgAs /g creatinine), measured by the inductively coupled plasma-mass spectrometry (ICP-MS). The mean As/Cr level in spot urine was 43.2 µg/g Cr (min. – max., 5.1 – 353.0 µg/g Cr). Sixty-nine percentage of patients had elevated arsenic levels in 24-hour urine samples (As > 50 µg/day).

Conclusion: This is a unique cohort of subacute arsenic poisoning as the patients had been exposed to inorganic arsenic of quantity much higher than those with drinking water in contaminated region, with substantial amount of urinary As for a prolonged period of time. It was believed that the toxicity of the folk medication was inadvertently increased by heating during manufacturing process, where As₄S₄ in the realgar was oxidized to arsenic trioxide (As₂O₃). Arsenic poisoning can occur following inappropriate preparation and use of realgar-containing folk medicine.