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Clinical course and outcomes of oral methotrexate toxicity; a retrospective descriptive study

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Objective: Methotrexate (MTX) is used worldwide for many diseases and high dose injection regimen can lead well-known toxicity. On the other hand, low dose oral regimen can also be toxic, but the data about the clinical course and treatment are limited.

Methods: This was a retrospective descriptive study included adult patients with symptomatic MTX toxicity reported to the Ramathibodi Poison Center, between 2011 and 2017. Patient's profile, clinical course, and outcome of toxicity were described.

Results: A total of 35 patients were identified. Common clinical manifestations were mucositis (94.3%) and pancytopenia (94.3%). Fourteen cases (40%) were poisoned from unintentional overdose, while there were 3 cases (8.6%) overdosed from prescription error. The other cases were intoxicated with regular usual dose (median 10 mg/week, range 2.5-20 mg/week 18cases, 51.4%) and chronic kidney disease (CKD) might be an associated factor in this toxicity. There were 9 deaths (25.7%) and each had a severe clinical course with severe leukopenia. Of 9 deaths; 5 cases (55.6%) were intoxicated with usual dose, 3 cases (33.3%) were intoxicated with unintentional purpose, 1 case (11.1%) was intoxicated by prescription error. Of the deaths, 2 cases had CKD and the remaining 7 had impaired kidney function but an unknown baseline.

Conclusion: MTX toxicity can occur with overdose or even usual dose prescription and the outcome was high mortality. Drug administration in chronic kidney disease patients should be caution and close monitored.