Different courses of quetiapine poisoning subject to gastric decontamination.

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Objective: Quetiapine is widely used as an antipsychotic drug. Hence, intoxications with this substance are equally common in poison centre practice. Different drug formulations – immediate-release vs. extended-release – show different kinetic features not only when used in therapeutic doses, but also in intoxications. It has since been described that large doses of extended-release (XR) quetiapine clump in the stomach [1]. Therefore, gastroscopy has virtually become a standard procedure in massive overdoses of these drugs. We report on two poisoning cases with high doses of XR quetiapine showing very different courses subject to the completeness of gastric decontamination.

Case 1:

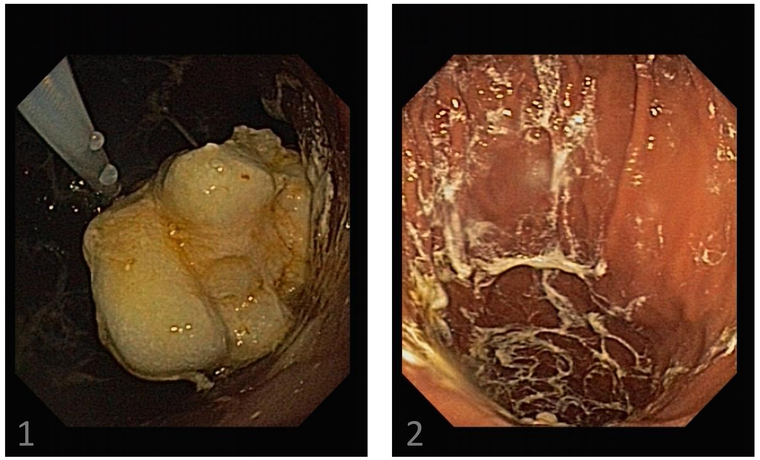
Patient 1:	48-year-old female
Dose:	18.2 grams of XR quetiapine
Delta time:	about 1 hour (admission to hospital)
Treatment:	activated charcoal (AC) (pre-hospital), gastroscopy (EGD)
Symptoms:	coma, prolongation of QT interval, aspiration pneumonia
Course:	severe symptoms and intensive care treatment for 4 days

Patient 1 ingested XR quetiapine in a suicide attempt. A dose of AC was applied by the emergency service to the somnolent but still responsive patient. Upon admission to hospital, EGD was performed. During EGD, a massive conglomerate of white matter was observed, but only about one tenth of it could be removed within 2.5 hours. The poison centre then recommended repeated administration of AC for at least 24 hours and cardiovascular monitoring in intensive care. Consequently, the patient was dosed with AC repeatedly. However, within 24 hours after ingestion she became comatose (GCS 3) and required mechanical ventilation. She also showed signs of aspiration pneumonia and remained in intensive care for a total of 4 days, until another EGD found an empty stomach. After that, she could finally be extubated and was then transferred to a psychiatric clinic.

Case 2:

Patient 2:	31-year-old female
Dose:	14 grams of XR + 3 grams of immediate release quetiapine
Delta time:	about 1.5 hours (admission to hospital)
Treatment:	gastroscopy (EGD)
Symptoms:	somnolence
Course:	symptoms for 4 hours, intensive care for 1 day (preventively)

Patient 2 ingested XR plus immediate release quetiapine (along with 8 grams of ibuprofen) in a suicide attempt. She was slightly somnolent upon admittance to hospital, and EGD was performed immediately. A large conglomerate of curd cheese-like consistency was found in the stomach (picture 1). The gastroenterologist could remove almost all (estimated 95 %) of it within 3 hours (picture 2). Albeit he reported difficulty to get hold of the substance, and he had to use quite a lot of endoscopic baskets and almost clogged the endoscope. After EGD, the patient was transferred to ICU, where she became awake within another 4 hours and wanted to leave the hospital. Cardiovascular monitoring was nonetheless performed for another 24 hours without further symptoms, and the patient could subsequently be transferred to the psychiatric ward.



Case 2: Findings in stomach at start of EGD (1) and after 3 hours (2)

References: [1] Rauber-Lüthy et.al. Gastric pharmacobezoars in quetiapine extended-release overdose: A case series. Clin Toxicol 2013; 51(10): 937-940.

Discussion: EGD was performed in both cases. In case 1, administration of AC prior to EGD may have complicated gastroscopic removal, which remained incomplete. Although no plasma levels were obtained in either case, gastroscopic findings confirmed the ingestion of large doses. We observed a significant difference in severity and duration of symptoms. Despite repeated application of AC, patient 1 became comatose and had to be monitored in ICU for 4 days. In contrast, patient 2 showed a much faster recovery and was awake within 4 hours after EGD. Although it is not known, how often AC was given in case 1, it seems to have been of little benefit for the clinical course.

Conclusion: These cases confirm previous observations that XR quetiapine tends to agglutinate, probably due to contained hydroxypropyl methycellulose. Hence it is important to know the galenic formulation, in order to adapt poison centre recommendations regarding treatment and duration of monitoring of the poisoned patient. As shown, almost complete removal of the conglomerate from the stomach was associated with a significantly faster recovery of the patient (4 hours vs. 4 days), regardless of the administration of AC. Therefore, it seems reasonable to take into consideration to recommend removing the whole conglomerate in large overdoses of XR quetiapine. This might not only reduce or even prevent severe symptoms and thus complications. It could also minimize the need for intensive care treatment, as intoxicated patients with only mild symptoms will not require extended monitoring. That could be even more beneficial just now during the coronavirus disease pandemic, where intensive care capacities are generally stressed to the limit.