

INTENTIONAL POLYMEDICAMENTOSE POISONING WITH PSYCHOTROPIC DRUGS – CASE REPORT

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Antidepressants, antipsychotics and anxiolytics are drugs prescribed as monotherapy or polymedicamentose treatment of depression, schizophrenia, bipolar and sleep disorders (1). Therapy in these patients carries an additional risk of suicide with prescription drugs. Laboratory of toxicology of the Institute of Forensic Medicine has received the postmortem samples of blood, urine, and vitreous humour of a 41-year-old woman with a presumption that death has occurred due to drug poisoning. Samples were prepared by liquid-liquid extraction, evaporated to dryness, reconstituted in methanol and analyzed by liquid chromatography with tandem mass spectrometry. It was used Xterra column C18 (3.5µm, 4.6 x 100mm). Methanol and 0.1% formic acid in water (flow rate 0.4 mL/min) were used as the mobile phase. Antipsychotic drug, quetiapine, antidepressants (clomipramine, mirtazapine), benzodiazepines (diazepam, nordiazepam, 7-aminoclonazepam) and hypnotic drug, zolpidem, have been detected in all analyzed samples. Identification of quetiapine and clomipramine was accomplished using the ion transitions m/z 384.0 → 253.0 and 221.15 and m/z 314.75 → 86.15 and 58.15, respectively. Quetiapine and clomipramine were detected in lethal concentrations in blood (13.82 mg/L and 2.51 mg/L) (1,2). Other detected drugs were within therapeutic range. Significant concentrations of all detected drugs were observed in urine and vitreous humor. Given the fact that antipsychotics follow the postmortem redistribution process it is hard to conclude that quetiapine is the main reason of the lethal outcome. Based on the autopsy findings, pathohistological examination and chemical-toxicological analysis, it was concluded that the death was violent and occurred due to combined drugs poisoning.

References

1. Skov, L., Johansen, S. S., Linnet, K. Postmortem Femoral Blood Reference Concentrations of Aripiprazole, Chlorprothixene, and Quetiapine. *Journal of Analytical Toxicology*, (2014). 39(1), 41–44.
2. Avella, J., Lehrer, M., Katz, M., & Minden, E. Two Cases Involving Clomipramine Intoxication. *Journal of Analytical Toxicology*, (2004). 28(6), 504–508.

NAMERNO POLIMEDIKAMENTOZNO TROVANJE PSIHOTROPNIM LEKOVIMA - PRIKAZ SLUČAJA

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Antidepresivi, anksiolitici i antipsihotici su psihotropni lekovi koji se propisuju kao mono- ili polimedikamentozna terapija za lečenje depresije, bipolarnog poremećaja, šizofrenije i poremećaja spavanja (1). Terapija kod ovih pacijenata nosi dodatni rizik od suicida upravo ovim lekovima. Toksikološka laboratorija Instituta za sudsku medicinu dobila je uzorke krvi, urina i tečnosti staklastog tela nakon obdukcije tela žene starosti 41 godinu sa sumnjom da je izvršila samoubistvo trovanjem lekovima. Uzorci su pripremljeni tačno-tečnom ekstrakcijom, upareni do suva, rekonstituisani u metanolu i analizirani tačnom hromatografijom sa tandem masenom spektrometrijom. Razdvajanje lekova je postignuto upotrebom analitičke kolone XTerra C18 (3.5 μ m, 4.6 x 100mm). Kao mobilna faza korišćeni su metanol i 0,1% mravlja kiselina u vodi (80/20/v/v) sa protokom 0,4 mL/min u izokratskim uslovima. U svim analiziranim uzorcima identifikovani su lekovi iz farmakoloških grupa antipsihotika (kvetiapin), antidepresiva (klomipramin, mirtazapin), benzodiazepina (diazepam, nordiazepam, 7-aminoklonazepam) i hipnotika (zolpidem). Za detekciju i kvantifikaciju su korišćeni fragmentni joni za kvetiapin (m/z 384.0 \rightarrow 253.0 i 221.15) i klomipramin (m/z 314.75 \rightarrow 86.15 i 58.15). U krvi su dokazane smrtonosne koncentracije kvetiapina 13,82 mg/L i klomipramina 2,51 mg/L (1,2). Ostali lekovi su dokazani u terapijskim koncentracijama. U uzorcima urina i tečnosti staklastog tela su takođe detektovane značajne koncentracije svih identifikovanih lekova. Ovako visoka koncentracija kvetiapina u krvi može biti posledica predoziranja, ali i postmortem redistribucije usled izraženog volumena distribucije antipsihotika. Na osnovu obdukcionog nalaza, patohistološkog pregleda organa i hemijsko-toksikološke analize, zaključeno je da je smrt bila nasilna i nastupila usled trovanja različitim grupama lekova.

Literatura

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