[ID-P#019] Rapid Test for Cathinone Abuse: A Case Demonstration

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Background: Cathinone, as a new psychoactive substance (NPS) and a phenethylamine, have jump up to be one of the most popular drugs abused in Taiwan, or even in the world in recent 2 decades. They emerge in endlessly from any structure changes to imitate the effects and functions of controlled substances, and so called newly designed drugs. In order to identify these chemicals quicky in emergency room (ER) in cases of suspected NPS intoxication and differentiate from amphet amine, we apply the lateral-flow immunochromatographyic (LFIC) assay under the base of avian antibodies production platform. Eutylone and mephedrone were chosen as the targets at first due to their frequent encounter in the past few years. Here, we demonstrated a case of acute mephedrone intoxication, rapid diagnosed in ER by the assay kit.

Materials and Methods: The geese and ducks were immunized with bovine serum albumin (BSA)- conjugated eutylone or mephedrone. Specific IgY, goose or duck anti-eutylone was purified from eggs, and both proved without any cross-reactivity with BSA. Both antibodies were used to assemble the rapid kit for eutylone or mephedrone.

Case Report & Result: A 23 years of old male was sent to ER by police due to irritable consciousness and violent behavior noted by his families after taking 5 packs of" coffee bag". He presented with conscious change, Glasgow Coma Scale (GCS) E4M6V1, tachycardia (heart rate 100/min), afebrile, severe rhabdomyolysis and acute renal injury. Negative urine amphetamine, morphine and benzodiazepine, but positive cathinone screen was noted. Under the impression of cathinone intoxication complicated with rhabdomyolysis, fluid supply and other intensive supportive treatments, his condition improved quickly in 24 hours and mephedrone and ketamine were detected in his urine by LC/MS/MS finally.

Discussion: Our rapid test for cathinone might be used in ER to identify patients of cathinone intoxication and serves as a diagnostic tool to differentiate from other abused chemicals or drugs. This test will help the physician to make the correct decision to treat the intoxicated patient in ER.