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Two cases of opioid withdrawal syndrome after alcohol dependence treatment with nalmefene successfully treated with morphine

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Objective

We present two cases of opioid withdrawal syndrome in patients on methadone maintenance therapy after a single dose of nalmefene successfully treated with morphine. Nalmefene is an opiate derivative used in the management of alcohol dependence in adult patients who have a high drinking risk level. It acts as a competitive antagonist of the μ-opioid receptor and the δ-opioid receptor and as a weak partial agonist of the κ-opioid receptor. It is rapidly absorbed after a single oral administration with a peak concentration after approximately 1.5 hours. The terminal half-life is estimated as 12.5 hours [1].

Tabel 1 : Metabolic half-life and peak plasma concentration of the parent compound form nalmefene, naloxone, methadone and morphine

	Metabolic half-life of the parent compound (hours)	Peak plasma concentration of the parent compound (hours)
Nalmefene	12,5 (oral)	1 to 2,5 (oral)
Naloxone	0,5 to 1,35 (IV)	0 (IV)
Methadone	8 to 59 (oral)	1 to 7,5 (oral)
Morphine	1 to 5 (IV)	0 (IV)

Reference : Micromedex® (electronic version). IBM Watson Health, Greenwood Village, Colorado, USA. Available at: https://www.micromedexsolutions.com/ (cited: 05/05/2021).

[1] Summary of Product Characteristics : Selincro® oral film-coated tablets, nalmefene oral film-coated tablets. H Lundbeck A/S (per EMA), Valby, Denmark, 2015..

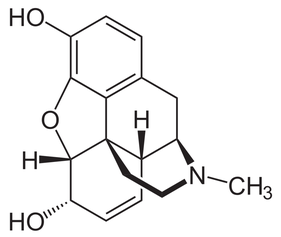
Case reports

Case 1: A 33-year-old man on methadone maintenance treatment was admitted to the emergency department after ingestion of a single dose of 18 mg of nalmefene. At presentation he suffered an acute opioid withdrawal syndrome with intense agitation, abdominal pain, diarrhoea and tremor. After transfer to the intensive care unit he was treated with intravenous morphine with a loading dose of 50 mg and a continuous infusion of 700 mg per 24 hours during one day. The next day the morphine infusion was discontinued, methadone was restarted and the patient recovered without sequalae after one day in a medium care ward.

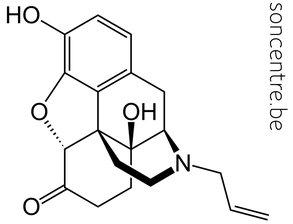
Case 2: An adult drug addict under methadone maintenance therapy with a dose of 35 mg per day was prescribed nalmefene for alcohol dependence by his general practitioner. After a single dose of 18 mg nalmefene he stated to be very thirsty and he needed to be hospitalized urgently for acute opioid withdrawal syndrome with intense agitation, abdominal pain and diarrhoea. He was treated with a loading dose of 15 mg of morphine and an infusion of 10 mg per hour for the next 24 hours. He recovered without sequelae.

Conclusion

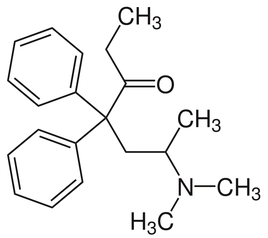
Drugs for alcohol dependence should be prescribed guardedly and with a full understanding of their interactions with other medications in patients on methadone maintenance therapy. In these two cases the management of the precipitated acute opioid withdrawal syndrome after one single dose of nalmefene exposure included the use of morphine for 24 hours in addition to supportive treatment during hospitalization.



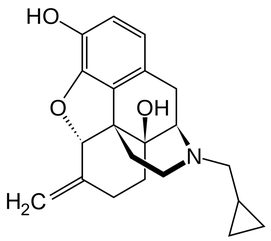
Morphine



Naloxone



Methadone



Nalmefene

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