

Potential antidote for Rompun (xylazine) in humans

Sir, — I would like to bring to the attention of the medical profession the recent registration in New Zealand of Recervyl (yohimbine-HCl) as a licensed animal remedy for the reversal of Rompun (xylazine) sedation in deer. Many thousands of doses of Rompun, a non-narcotic thiazine derivative, are used annually in this country for the chemical restraint of deer, cattle and dogs. Rompun is often mixed with Fentaz (a combination of a morphine derivative, fentanyl, and a tranquilliser, azaperone). This gives very effective immobilisation at low doses. There is a real risk of accidental self-injection especially when working with highly mobile, nervous animals such as deer. Furthermore, it is not only veterinarians who are at risk but also their assistants and farmers to whom Rompun is dispensed. Recently in the North Island a veterinarian injected himself accidentally with 0.5 ml of a mixture of Rompun and Fentaz (30 mg xylazine, 5 mg fentanyl, 40 mg azaperone). This dose is sufficient to immobilise an adult fallow buck (70-80 kg) and is potentially lethal in a human if treatment is not available. The veterinarian was taken immediately to a nearby hospital where Narcan (naloxone) was administered to reverse the effects of the fentanyl. Despite this he remained unconscious for 13 hours, presumably due to the continued action of xylazine and azaperone.

There are two recorded cases of intentional xylazine overdose in man [2,3]. Their clinical signs included lowered cardiac rates, CNS and respiratory depression, transient hyperglycaemia and ventricular arrhythmias. They were given supportive therapy which included intubation, ventilation and fluids. One was unconscious for over 60 hours. The other was somnolent for several hours but was arousable intermittently and although she showed spontaneous respiration when aroused she had intermittent apnoeic spells. She was extubated 24 hours after admission. The authors in this latter case suggested that in future cases in alpha-blocker be given although unproven. There is now good evidence that the effects of xylazine in cases such as these could be reversed immediately with yohimbine or tolazoline.

Xylazine acts on the α_2 -adrenoceptors which control central neuronal dopamine and norepinephrine storage and/or release [1]. Yohimbine, an α_2 -adrenoceptor blocker, has been shown to antagonise the sedative effects of xylazine in deer, cattle, horses, dogs, cats, mice and chickens [7, 8, 11-13, 15-18, 22]. Tolazoline, another α_2 -adrenoceptor

blocker, is considered by some to be the treatment of choice for reversing the effects of clonidine overdose in humans [10], clonidine being an α -adrenergic agonist, closely related to xylazine. Tolazoline is also effective for reversing xylazine sedation in deer, cattle, dogs and chickens [11, 19-21 and Mackintosh, unpublished].

Yohimbine, a plant alkaloid, has a long folk history as an aphrodisiac and has been given to humans with apparent safety for over 100 years [5]. In a trial in humans, doses up to 0.125 mg/kg IV elicited dose-related rises in systolic, diastolic and mean blood pressures associated with 2 to 3 fold elevations in plasma norepinephrine. Other effects were a feeling of restlessness and a vague transient feeling of sexual arousal [6,14]. High doses (0.5 mg/kg IV) caused a state of anxiety and sometimes other signs such as facial flush, conjunctival suffusion, perspiration, nausea and vomiting [4,9]. The effects peaked within 15 minutes but patients were usually back to normal within 60 minutes.

In humans yohimbine is relatively safe and causes few side-effects at doses up to 0.125 mg/kg IV. This dose rate (0.125 mg/kg IV) is effective for reversal of xylazine sedation in most species. Therefore, in the treatment of cases of accidental or intentional self-injection of xylazine doctors could consider using yohimbine (0.125 mg/kg IV) in which case Recervyl could be used in an emergency. Most veterinarians who use Rompun are also likely to have Recervyl on hand. Rompun takes effect in four or five minutes and if a veterinarian or farmer accidentally injected himself with it and was unable to seek medical help they would be well advised to give themselves an intramuscular injection of Recervyl immediately, and then try to give it intravenously. The intramuscular route should effect reversal of xylazine sedation in 15 to 20 minutes while an intravenous dose should take one to two minutes.

The drug tolazoline (Priscol) should also be effective but it is not currently marketed here in an injectable form.

Yours faithfully,

Colin Mackintosh,

Invermay Agricultural
Research Centre,
Mosgiel.

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