

Efficacy of tiletamine/zolazepam in combination with butorphanol, medetomidine and azaperone for the chemical immobilization of captive plains bison

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Access to potent opioids for the purpose of wildlife immobilization has become increasingly difficult due to the human opioid crisis, stimulating a need for an alternative drug combination for bison immobilization. Combinations including tiletamine/zolazepam has shown success in this area but has also lead to some traumatic recoveries. In this study we evaluated two doses of tiletamine/zolazepam in a combination of tiletamine/zolazepam, medetomidine, butorphanol, and azaperone (MTZB+A) for reversible field immobilization. Eight healthy, male plains bison (*Bison bison bison*) from a captive herd were split into two treatment groups: a high dose (1.0mg/kg) or low dose (0.6mg/kg) of tiletamine/zolazepam. Induction times between the two groups differed by a few minutes but all immobilizations achieved a sufficient plane of anesthesia to permit surgical castration. All animals were reversed with naltrexone and atipamezole 60 minutes after induction and recoveries were uneventful. The mean time to recovery and the quality of recovery was the same in both groups. All animals became hypoxic while immobilized but were successfully treated with supplemental oxygen. The lower dose of tiletamine/zolazepam for MTZB+A was sufficient for captive bison chemical immobilization but further study with a larger sample size is required to determine if the high and low doses are statistically significant.

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