Effects of Intramuscular Alfaxalone and Midazolam Compared With Midazolam and Butorphanol in Rhode Island Red Hens (Gallus gallus domesticus)

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Abstract: Chickens (Gallus gallus domesticus) often undergo veterinary procedures requiring sedation; however, there is little published research evaluating the efficacy of sedation protocols in this species. The objective of this study was to assess the effects of intramuscular alfaxalone and midazolam compared with intramuscular butorphanol and midazolam in chickens. In a complete crossover study, 11 healthy adult hens were randomly administered midazolam 2.5 mg/kg IM combined with either alfaxalone 15 mg/kg IM (AM, n = 11) or butorphanol 3 mg/kg IM (BM, n = 11), with a 35-day washout period between groups. Time to first effects, recumbency, standing, and recovery were recorded. Physiologic parameters and sedation scores were recorded every 5 minutes by 2 blinded investigators. Fifteen minutes after injection, positioning for sham whole body radiographs was attempted. At 30 minutes, flumazenil 0.05 mg/kg IM was administered to all hens. Peak total sedation score was significantly higher for AM compared with BM (P < 0.001). Mean ± SD or median (range) time to initial effects, recumbency, standing, and recovery in AM and BM were 1.9 ± 0.6 and 2.6 ± 0.9 (P = 0.02), 3.5 (1.6–7.6) and 4.8 (2.2–13.0) (P = 0.10), 40.3 (28.0–77.8) and 33.2 (5.2–41.3) (P = 0.15), and 71.2 (45.7–202.3) and 39.9 (35.9–45.9) minutes (P = 0.05), respectively. Radiographic positioning was successful in 6 of 11 (54.5%) and 0 of 11 (0%) birds in the AM and BM groups at 15 minutes, respectively. Heart and respiratory rates remained within acceptable clinical limits for all birds. Intramuscular AM resulted in significantly faster onset of sedative effects, significantly longer duration of recumbency, significantly higher peak sedation, and improved success of radiographic positioning compared with intramuscular BM. Intramuscular AM produces clinically effective sedation in chickens without clinically significant cardiorespiratory effects.