Evaluating Post-Surgical Analgesia Use in Rodents at UW-Madison
Melissa Hunsley, PhD; Derrik Duchesneau, MS; Sarah Johnson-Schlueter, BS
Research Animal Resources and Compliance, University of Wisconsin-Madison

Introduction

In 2015 the veterinarians and compliance personnel at the Research Animal Resources and Compliance (RARC) unit at UW-Madison investigated the compliance rate of researchers using analgesics after surgery on mice and rats. The concern was that with such a large animal program (~900 protocols), vet staff did not have the resources to confirm that every investigator using rodents was following the analgesic regimens described in their approved protocols. Over a three-month period, Animal Program Assessment Specialists (aka compliance personnel) visited labs across campus, talked to investigators, and examined surgical records.

Methods

• Database reports listed 536 protocols using rats or mice; 243 had survival surgery
• Of these, we verified that 82 labs had performed surgery over the previous 12 months
• We made unannounced lab visits to inspect surgical records and speak with the surgeons
• We provided surgery record templates, medical documentation training, veterinary contact information, etc.
• For any labs that did not follow their protocol, we discussed the details with the Chief Campus Veterinarian, and the IACUC if significant animal welfare concerns existed
• We reported the results to each of our IACUCs at the end of the study

Results

Figure 1 shows:
• 60% of labs were following analgesic regimens exactly as listed in their protocol
• 27% of labs were giving analgesics, but regimen was not followed exactly
• The remainder either had no records but indicated analgesics had been given (7%), or confirmed that they did not give analgesics (6%)

In addition, many important issues were uncovered:
• Analgesic regimens were inconsistent between different labs for the same procedure
• Analgesic and monitoring regimens were inconsistent between different sections of the same protocol
• Many protocols lacked descriptions of post-surgical monitoring
• Regimens listed in the approved protocol were sometimes overly stringent and not followed in practice
• Many labs did not understand that analgesic dosing and monitoring should be documented

Discussion

Since this survey was conducted in 2015, we have implemented an online protocol system that has vastly improved several of the problems found. For example, the PI now inputs analgesia regimens into an analgesic/anesthetic regimen table in the protocol, then they can choose any regimen for any procedure. This eliminates numerous explanations of the same regimen in different sections of the protocol.

In addition, results of this survey drove us to make several other improvements in the program. These include:

• Developing the Veterinary Verification and Consultation (VVC) process, which allows the veterinarians to amend protocols to change minor procedures or analgesic regimens as a variant of those already approved
• Developing an analgesic service to provide extended-release buprenorphine to postsurgical animals at a nominal fee
• Modifying the rodent surgical record template to include postsurgical care and monitoring

All of these changes have helped us to reduce administrative burden on PIs, improve animal welfare and increase efficiency in the UW-Madison animal program.