UBC ANIMAL CARE COMMITTEE GUIDELINES for POLICY 017

Guidelines on Monitoring and Medical Records of Animals used for Research, Teaching and Testing

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PURPOSE:

The purpose of this document is to provide details on assessing animal health in different animal models. It is intended to accompany the "Policy 017 Monitoring and Medical Records of Animal used for Research, Teaching and Testing". Minimal requirements for health assessments for rodent models are included in Appendix I. A major goal of health and welfare monitoring is to be able to quickly identify "abnormal" animals and to have a clear plan of action to address the health concerns identified.

MONITORING RECOMMENDATIONS:

1. A monitoring checklist should be developed with input from all involved with animal monitoring, including the Principal Investigator (PI) and all personnel involved with the study. Input from the clinical veterinarians, post-approval monitoring (PAM) team, and members of the ACC is encouraged. This will be particularly important for non-rodent species that may have specific monitoring requirements.

2. The clinical health variables to be recorded will vary between studies. At a minimum these should capture overall health and study specific concerns.

3. For rodents, what is included in a health assessment for monitoring should be based on recommendations listed in **Appendix IA-ID.** Additional monitoring may be required for specific studies and non-rodent species.

4. Researchers should aim to complete both invasive procedures and ACC required post-procedure monitoring within normal working hours. If surgery or other major procedures are performed late in the day or on a Friday it is expected that out of hours monitoring will be done by the study team members or specifically arranged with facility staff.

5. In many studies and for many species, especially rodent species, change in weight is a helpful measure of animal health.

6. For most surgeries, animals should be assessed for pain and analgesia for up to 3 days post-operatively (for details see "UBC Animal Care Committee Guidelines - Rodent Procedures Classifications and Analgesia Requirements"). Analgesia must be considered appropriate if the condition is known to be painful and/or

the animal shows signs of pain and there is no contraindication that would make the risk of side effects outweigh the benefit. Pain relief may be required beyond the 3rd day depending on the study. Exceptions must be approved by the committee and clearly written in the protocol.

7. The actions taken by researchers when welfare concerns are identified as a result of monitoring should follow the "Policy 004 Animal Health and Welfare Concerns: Treatment and Humane Endpoints".

Appendix IA - ID: Rodent Monitoring Sheet/Record Guidelines. Minimum expected monitoring requirements for different examples of animal models.

Appendix II: References used to create monitoring sheet/record guidelines in Appendix I.

APPENDIX ID: RODENT MONITORING SHEET/RECORD GUIDELINES – These signs should be documented for experimental monitoring. Monitoring sheets and humane endpoints are approved on a per protocol basis. The frequency of monitoring MUST increase with risk of deterioration and severity of clinical signs. See Appendix II for References.
Important: more than one column or several columns may apply to each study and additional monitoring requirements may apply.

Variables	Infectious Models Acute	Infectious Models Chronic	Colitis	Aging & Longevity	Food Restriction & Special Diets
Appearance **Activity** **Posture and Gait**	Daily or every other day, depending on course of disease.	Once or twice weekly, depending on course of disease.	1-2 times weekly until clinical signs appear, then minimum once daily.	At one year and then at least monthly until onset of clinical signs of aging, then daily to weekly, depending on severity of clinical signs, if procedures performed or age exceeds normal laboratory lifespan for species.	If diet is not nutritionally complete, monitor twice weekly.
Body Weight **Initial baseline weight required**	Daily or every other day, depending on course of disease.	Once or twice weekly, depending on course of disease.	Weekly until clinical signs appear, then daily to twice weekly, depending on model severity.	At one year and then at least monthly until onset of clinical signs of aging, then 1-2 times daily to weekly, depending on severity of clinical signs. Precipitous weight loss and decreased temperature have been shown to be markers of imminent death.	Once to twice weekly. Weight loss should not to exceed 20% of free feeding weight of aged matched control.

Variables	Infectious Models Acute	Infectious Models Chronic	Colitis	Aging & Longevity	Food Restriction & Special Diets
Hydration	Daily or every other day, depending on course of disease.	Once or twice weekly, depending on course of disease.	When assessing general clinical signs.	When assessing general clinical signs and particularly when approaching humane endpoint.	Twice weekly for nutritionally incomplete or special diet.
Temperature	Temperature daily or every other day, depending on course of disease. Use directed infrared scanner or implanted thermistor microchip. T is most predictive sign of impending death.	Temperature once or twice weekly, depending on course of disease. Use directed infrared scanner or implanted thermistor microchip. T is most predictive sign of impending death.		As endpoint approaching measure temperature daily. Use directed infrared scanner or implanted thermistor microchip. Precipitous weight loss and decreased temperature have been shown to be markers of imminent death.	
Respiration				At least once daily as endpoint approaches or moderate respiratory signs begin.	
Elimination			Weekly until first clinical signs, then daily. Score for stool consistency, rectal bleeding and prolapse and anal irritation.	When assessing general clinical signs.	
Neurological Signs				When assessing general clinical signs. Daily if previous neurological signs present. Continue until resolution or	

Variables	Infectious Models Acute	Infectious Models Chronic	Colitis	Aging & Longevity	Food Restriction & Special Diets
				humane endpoints reached.	
SKIN **Incision,** **Wound, injection or sampling site**				When assessing general clinical signs.	
Tumour			See internal tumour monitoring for colon cancer models e.g. azoxymethane	When assessing general clinical signs. If tumours present, consult tumour monitoring.	
Other					
Pain Assessment	Frequency of pain assessment depends on dosing interval for the drug chosen. See UBC Animal Care Committee Guidelines- Rodent Surgical Classifications and Analgesic Guidelines. Animals should be monitored when the analgesia is expected to wear off (6-8h for buprenorphine, 24h for Meloxicam (Metacam) or Ketoprofen (Anafen), especially for the first 24h.				
Nursing care depends on health assessment and scientific goals of study	Nursing care may alter course of disease so generally not recommended. Consider negative effects of ventilated caging (i.e. hypothermia).	Nursing care may alter course of disease so generally not recommended. Consider negative effects of ventilated caging (i.e. hypothermia).	Gel water replacement on cage floor and /or fluid replacement (SQ fluids). Food on cage bottom. Other treatment generally contraindicated by study design.	Soft bedding (to minimize age-related pain), enrichment, long sipper tubes or gel water replacement on cage floor and /or fluid replacement (SQ fluids) and food on cage bottom. Analgesia or other care as per clinical signs.	Rodents will not consume water without food. Food restriction studies must not be started until rodents are at least 14 wks old, otherwise weight gain due to growth must be accounted for.

Variables	Infectious Models Acute	Infectious Models Chronic	Colitis	Aging & Longevity	Food Restriction & Special Diets
Humane endpoints specific to model and referenced in the literature. Ensure typical endpoints and study-specific endpoints are included**.**	Typical endpoints. Other: Temperature below 34.5^{o}C, severe dehydration, % daily body weight loss as predetermined in pilot studies.	Typical endpoints. Other: Temperature below 34.5C, severe dehydration, % daily body weight loss as predetermined in pilot studies.	Typical endpoints. Other: Marked rectal prolapse that is necrotic or bleeding, swollen and the animal cannot defecate	Must be clearly defined for each study and scientifically justified. Use of precipitous weight loss and decreased temperature have been shown to be markers of imminent death.	Weight loss beyond 20% or dehydration that does not respond to increased feeding.

APPENDIX II: REFERENCES – Sorted in alphabetical order by model

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