**APPROACH TO THE RABBIT WITH ANOREXIA**

Anna Meredith

Anorexia should be regarded as the most common emergency in the rabbit. This obviously has many potential causes which will need investigation, but anorexia rapidly leads to gastrointestinal stasis, hepatic lipidosis and ketoacidosis, which can be rapidly fatal. Rabbits that have not eaten for 24 hours should be considered an emergency and be seen immediately. Whatever the cause of the anorexia, the treatment of the rabbit is essentially the same. This should be instituted immediately and once stabilised, appropriate investigations as to the underlying cause of the anorexia can be undertaken. Common causes include dental disease, respiratory disease, pain and severe stress. Once anorexia is present, a “vicious circle” occurs, as anorexia leads to gastrointestinal stasis, which is painful and in itself leads to anorexia.

**GENERAL SUPPORTIVE CARE**

Due to their prey status and high susceptibility to stress, it is essential to hospitalise the sick rabbit in a quiet area away from the sight, sound and smell of dogs and cats, to reduce external stressors, and to allow the rabbit to express normal behaviour. General supportive therapy consists of

- fluid replacement
- analgesia
- oxygen administration (if indicated),
- warming if hypothermic or unable to thermoregulate,
- gastrointestinal motility drugs,
- provision of a high fibre diet.
- minimisation of stress

Fluids may be given via the following routes: intravenous, intraosseous, intraperitoneal, subcutaneous or orally by syringe feeding or via a nasogastric tube.

Daily maintenance fluid requirements are 75 – 100ml/kg/day. Dehydration deficits are added to this as a percentage of bodyweight, based on clinical signs of dehydration. Shock fluid volumes of 100ml / kg may be administered in rabbits over 60 minutes. Colloids or hypertonic saline may be necessary in cases of shock. Hypertonic saline should not be used, however, if the rabbit is dehydrated. Aggressive warming is vital in cases of shock. Continuous monitoring, including temperature and blood pressure measurements, is important.

As a general rule assume 10% dehydration in any debilitated rabbit and replace 50% of the fluid deficit in 12 hours and the remainder (plus maintenance and concurrent losses) in 48 – 72 hours.

The marginal ear vein, cephalic vein and lateral saphenous vein can all be used for IV catheter placement. Use of a topical local anaesthetic cream (‘EMLA’) is recommended prior to placement. Elizabethan collars can be used to prevent the rabbit from chewing or removing the catheter, but are stressful and prevent caecotrophy. Use of a topical local anaesthetic cream (‘EMLA’) is recommended prior to placement.

Intraosseous catheters may be placed into the top of the trochanter of the femur parallel to the long axis of the femur, or into the tibia via the tibial plateau. Use an 18-23 gauge, 1-1.5 inch needle. The IO route is a useful alternative to IV for fluid administration in a collapsed rabbit.

Provision of analgesia is essential in the debilitated rabbit, even if there are no obvious signs of pain. Response to treatment and recovery rate is improved with analgesia. Very stressed rabbits, even if not in pain, will benefit from the use of anxiolytics such as diazepam or midazolam in the hospital environment.

### Rabbits – Analgesic Therapy:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose rate</th>
<th>Frequency of dosing</th>
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</thead>
<tbody>
<tr>
<td>Buprenorphine</td>
<td>0.05 – 0.1mg/kg SC, IM, IV</td>
<td>6-12 hourly</td>
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<tr>
<td>Butorphanol</td>
<td>0.1 – 0.5 mg/kg SC, IM, IV</td>
<td>2 – 4 hourly</td>
</tr>
<tr>
<td>Medicine</td>
<td>Dose/Route</td>
<td>Frequency</td>
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<td>----------------</td>
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</tr>
<tr>
<td>Carprofen</td>
<td>2.2mg/kg SC, PO</td>
<td>12 hourly</td>
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<tr>
<td>Ketoprofen</td>
<td>1mg/kg IM, SC</td>
<td>12-24 hourly</td>
</tr>
<tr>
<td>Meloxicam</td>
<td>0.3 – 0.6 mg/kg PO</td>
<td>24-hourly</td>
</tr>
<tr>
<td>Pethidine</td>
<td>10 mg/kg SC, IM</td>
<td>2 – 3 hourly</td>
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Piping oxygen into an adapted cage or incubator in which rabbits with respiratory difficulties may be placed creates an oxygen cage.

Provision of a high fibre diet is vital and should be instituted as soon as possible once the rabbit is rehydrated. Unless there is a complete GI obstruction, which is a surgical emergency, there is never an indication to starve a rabbit, even if it has diarrhoea. Assisted feeding is generally given via syringe, which most rabbits tolerate well. Commercial high fibre diets are available for this purpose. Rabbits tolerate nasogastric and nasoesophageal tubes well. Placement is as for the cat. Appetite may be stimulated in the convalescing rabbit by provision of fresh greens such as grass, dandelion leaves, parsley and kale. Probiotics, multivitamins (particularly vitamin B complex), and gut transfaunation (feeding of normal caecotrophs), may all be useful.

If a gastrointestinal obstruction is not suspected, then the following gastrointestinal motility drugs can be used to stimulate gut motility in any anorexic rabbit.

**Rabbits - prokinetics**

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose/Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metoclopramide</td>
<td>0.5mg/kg SC TID</td>
</tr>
<tr>
<td>Cisapride</td>
<td>0.5mg/kg PO BID</td>
</tr>
<tr>
<td>Ranitidine</td>
<td>2-5mg/kg PO, SC, IV BID</td>
</tr>
</tbody>
</table>

**Gastrointestinal stasis**

Food intake and GI motility are co-dependent; thus anorexia will cause hypomotility, and hypomotility will cause anorexia. Factors leading to reduced GI motility in the rabbit include:

- Lack of dietary fibre
- Anorexia
- Chronic dehydration
- Environmental stressors:
  - Proximity of predators
  - Proximity of a dominant/competitive rabbit
  - Change/destabilisation of group hierarchy
  - Sudden change of diet
  - Change of housing
  - Transport
  - Extremes of weather/temperature
  - Loss of a companion
  - Pain
  - Post-surgical adhesions
  - Ingestion of toxins (eg lead)
  - Foreign body

Reduced gut motility leads to dehydration of gut contents, which decreases motility further.

Gastric stasis leads to dehydration and impaction of the normal stomach contents, which include hair (commonly referred to as a hairball or trichobezoar). Non obstructive ileus will follow on from untreated gastric stasis and pain is a prominent feature, manifest as tooth-grinding, a hunched posture and reluctance to move.

Treatment consists of:
- Fluid therapy - to maintain circulation and rehydrate GI contents. In mild cases, oral fluids may be all that is required, but in more severe cases intravenous fluids are indicated. Maintenance volumes are 100ml/kg/day.
- Analgesia – buprenorphine 0.01 - 0.05 mg/kg sc/iv tid, butorphanol 0.1-0.5mg/kg sc/iv every 2-4 hrs.
- Motility modifiers – metaclopramide 0.5mg/kg sc bid, ranitidine 2-5mg/kg po bid. (also has anti-ulcer effect), cisapride 0.5mg/kg po bid.
- Assisted feeding – 10-20ml/kg at least three times a day of commercially available high fibre herbivore recovery diets, slurries of ground rabbit pellets. Always offer hay.
- Exercise – helps to stimulate GI motility.

It may take up to three days or more for faecal output to resume.

The use of enzymatic products (eg papain) to digest trichobezoars is controversial – these products do not actually digest hair (keratin) but may help to break down the matrix holding the material together. Fruit juices such as pineapple juice are often advocated as they contain enzymes (bromelin in pineapple and papain in papaya) but juices are high in simple sugars which may promote caecal dysbiosis and clostridial overgrowth.