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From trips across the state to flights around the world, today's horses are regular globetrotters. And while most horses arrive at their destinations happy and healthy, some will arrive with some unwelcome baggage: a fever and possibly even clinical disease.

At the 2014 British Equine Veterinary Association Congress, held Sept. 10-13 in Birmingham, U.K., Imogen Johns, BVSc, Dipl. ACVIM, MRCVS, reviewed the diagnosis, treatment, and management of transportation-associated fevers in horses and shared tips on how to prevent them from occurring.

"Horses are typically transported in enclosed spaces with variable ventilation and can be exposed to high levels of inspired irritants such as ammonia from bedding and dust and molds from hay and bedding," said Johns, a senior lecturer in equine medicine at the Royal Veterinary College, in Hertfordshire, U.K.

Additionally, traveling horses commonly become dehydrated, which further compromises their ability to clear irritants from their airways and can lead to a lower respiratory tract infection, she said.

Johns said two recent studies suggest that 6.6-10.9% of horses that travel will develop a fever within the first 12 to 24 hours after transportation.

"Medication history available for one of these studies suggests that the majority of these horses recovered without antimicrobial treatment, suggesting that the fever was a transient (short-lived) event," she said.

The study results also suggest that owners should seek veterinary attention for fevers that last for more than 24 hours after arrival and/or are accompanied by clinical signs of disease, Johns said. This could be a sign of a more serious problem that requires prompt treatment, such as a bacterial infection (often referred to as "shipping fever"), a viral infection (such as influenza or equine herpesvirus), or pleuropneumonia (inflammation both within the lung and the pleural cavity).

### Diagnosis

**Physical Exam** Johns said a veterinarian examining a horse with a transport-associated illness should carry out a complete clinical examination, including a rebreathing exam (which involves placing a large plastic bag over the horse's nose—as the horse breathes in expired carbon dioxide, his brain signals him to take deeper and slower breaths, making it easier for the veterinarian to hear the lung sounds).

She relayed that horses with mild respiratory disease often have nonspecific clinical signs, but as disease severity increases so do the signs.

In horses with pleuropneumonia, for instance, the classic clinical signs including systemic illness, ventral edema (swelling beneath the chest/abdomen), and respiratory distress become more obvious with increasing disease severity.

Such horses might stand with their elbows abducted (spread apart), take shallow breaths, and object to the veterinarian listening to their thorax (or chest cavity) with a stethoscope.

**Blood Work** Johns also said a complete blood count and acute phase protein (a type of inflammatory molecule) measurements can help the veterinarian identify an inflammatory process, as "transport alone has not been shown to cause dramatic changes in any of these parameters."

**Endoscopy** Veterinarians also have endoscopy (the use of a small camera run through the horse's nostrils into the airways) at their disposal when transport-associated fevers arise. She said that endoscopy is a logical step to take in horses with signs of respiratory disease or when clinical signs are vague if respiratory disease is likely.

Johns said endoscopy coupled with cytology, bacterial culture, nasal swabs, and blood work to check for viral infections can provide veterinarians with substantial diagnostic clues.

**Ultrasound** Finally, Johns said, ultrasound is the best diagnostic method to use when veterinarians suspect pleural effusion (fluid accumulation in the chest cavity), sometimes associated with pleuropneumonia.

### Treatment

The exact treatment a veterinarian prescribes will, of course, depend on the diagnosis. However, there are several general things veterinarians should remember when treating horses with post-transport fever, Johns said:

- "Because early treatment of post-transport bacterial respiratory infections improves the outcome, broad-spectrum antimicrobial therapy should be initiated empirically prior to any pending diagnostic tests," she said;
- Supportive care—including non-steroidal anti-inflammatory drugs, pain management, intravenous fluids, and attention to nutrition—should be provided as needed;
- "In cases where pleural fluid accumulation is identified, drainage is recommended to improve the horse's comfort and respiratory function, and remove bacteria and inflammatory debris," she said; and

**Once the horse's infection has resolved, allow him ample time to recover:**

**"Following the resolution of infection, rest for at least one to two months is important to allow residual inflammation to resolve."**

### Prevention

"Close monitoring of horses both prior to and after transportation is key to preventing the development of severe disease," Johns said.

She stressed that owners not transport horses that are sick or have a fever, unless they're going to receive veterinary care. Additionally, after a horse arrives at his destination, she recommended owners monitor their animals' rectal temperature for at least three days and contact their veterinarian if they feel their horses require treatment.

And finally, she said, "Although one study has suggest that enrofloxacin may be efficacious in preventing post-transportation pneumonia, prophylactic antimicrobials are not recommended due to the possibility of adverse effects on the gastrointestinal tract and the development of antimicrobial resistance."

### Take-Home Message

Most horses travel without incident, but if one develops a post-transport fever that lasts for more than 12 to 24 hours or is accompanied by other clinical signs, it's important to seek veterinary attention as soon as possible; early diagnosis and treatment will improve a horse's chance of recovery.

But most importantly, take steps to prevent post-transport fever by monitoring horses closely and using good judgment when deciding whether to trailer a horse that could be developing an illness.