Importance of following the code

The HBLB Code of Practice forms part of everyday life on the stud, but how and why did it evolve and how is it kept relevant in today's rapidly changing world?

TREVOR JONES

Strict hygiene measures were introduced in the thoroughbred breeding industry in the wake of the CEM outbreak in the 1970s

Whenever a broodmare is sent for covering it is standard practice for a set of swabs to be taken at various intervals before covering to check that she is free from diseases which could be passed on either to the stallion, or via him to other mares. This common sense procedure we now take for granted as 'normal practice', but this was not always the case.

It was the explosion on to the scene of the contagious equine metritis (CEM) organism which pushed the industry into taking the necessary effective action to stem the spread of this disease, which was having disastrous consequences for the thoroughbred breeding industry, and the Horserace Betting Levy Board Veterinary Advisory Committee (VAC) played a significant role in this.

The CEM outbreak occurred in 1977 and the disease was first diagnosed by Donald Simpson, a partner at the Crowhurst Practice which has now metamorphosed into the Newmarket Equine Hospital. The initial outbreak occurred on the National Stud, although later epidemiological data indicated that the organism and disease was probably present in both Ireland and France prior to its detection in Newmarket.

The disease exploded on to the scene as a completely new phenomenon. Mares would be covered and would then develop a vaginal discharge a few days after covering, which caused infertility. It soon became obvious that the disease was being spread not only by the stallions but also by veterinary surgeons and their equipment.

Containment vital

This immediately led to the introduction of a whole raft of containment measures, which included the use of disposable gloves and single use, disposable speculums. Prior to that time vets would often use steel instruments which were merely washed between horses, and hygiene measures in general were not great.

At the time of the initial outbreak the attending veterinary surgeons could see the organism under the microscope on samples taken from affected mares, but could not grow the organism in culture. It fell to Dr Edward Taylor at the University of Cambridge to realise that this organism required a specific type of environment in which to grow, called microaerophilic culture. This was the standard method of growing organisms such as that responsible for brucellosis.

Further immediate research work showed that some horses were acting as carriers of the disease without showing clinical signs and intense investigation of the reproductive tract in both the stallion and the mare revealed that the organism survived best in some very specialised and local sites. These were found to be the clitoral fossa and sinuses in the mare and the urethral fossa and prepuce in the stallion, all areas which have low accessibility to air and therefore have the low oxygen levels required for survival of the organism.

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Equine Herpes Virus infections

By Deidre M Carson

There are five equine herpes viruses which cause infection in the horse but the two of major concern are EHV1 and EHV4. Both of these are endemic in the UK horse population. EHV1 causes respiratory disease and is the main infectious cause of abortion in the second half of pregnancy. EHV4 also causes respiratory disease, especially in young stock, but can also occasionally cause abortion. One of the biggest problems we face in trying to minimise the risk of infection with either of these viruses is that they induce a lifelong carrier state in horses which have recovered from infection. These carrier animals act as a source of infection for other horses as well as themselves. A further problem is that, even after infection, protection against future infection (immunity) is very short-lived (three to six months), so re-infection is common.

Clinical Signs

Respiratory Signs

In animals which have not been previously infected, both EHV1 and EHV4 cause upper respiratory tract disease. The incubation period (time between exposure to infection and onset of clinical signs) can be anything between two and ten days but is usually around three days. Signs include some or all of the following: increased temperature (pyrexia); watery nasal discharge which might become thicker if secondary bacterial infection occurs; cough; loss of appetite; depression. Symptoms can persist for a few weeks, particularly if secondary bacterial infection occurs.

Abortion

Abortion due to EHV1 or EHV4 is seen in the last third of pregnancy. The mare rarely shows any evidence of illness before aborting, although there might be a history of respiratory infection several weeks or more earlier. The foetus appears fresh and may even be born alive but soon dies. In some cases, an apparently normal foal may be born at term but succumbs to the effects of respiratory infection soon after. Abortions usually occur singly and can occur in vaccinated mares, but batches or outbreaks can also happen. Large scale outbreaks are less common nowadays due to improved management methods.

Sources of Infection

The main route of infection is inhalation of infective particles which have been coughed or breathed out by an infected or carrier animal. Because of the existence of the carrier state and because immunity following infection (and vaccination) is short-lived, mares and young stock provide a constant source of infection and re-infection. Infection occurs after inhalation or ingestion of infective material, either directly from another horse's respiratory tract, by contact with a contaminated surface, by ingestion of contaminated food or water, or through contact with an infected foetus or foetal fluids.

A carrier can be induced to start excreting the virus without becoming ill themselves and so cannot be readily detected. Trigger factors for a carrier to start excreting the virus in respiratory tract fluids include any stressful occurrence. These include transportation, competition, mixing into new social groups, overcrowding etc. A filly coming out of a training yard onto a stud is a prime source of infection for others, particularly pregnant mares, on the stud.

The herpes viruses are not very stable in the environment and are easily killed by most disinfectants. However, they are believed to be able to survive longer under certain conditions, e.g. if protected by moisture, organic matter such as feed or general stable 'dirt'. Therefore, good stable cleanliness and hygiene can help reduce the risk of spreading the disease.

In the event of an abortion, the HBLB guidelines should be followed (see HBLB Codes of Practice 2012). The mare must be isolated and kept away from other mares for at least 28 days. The stable should be disinfected and contaminated bedding disposed of, preferably burned. The aborted foetus, placenta and fluids are an excellent source of infection and should be kept well away from other horses.

Prevention

Management

The best way to try to prevent infection with EHV1 or EHV4 in pregnant mares is through good management practices. All incoming pregnant, barren or maiden mares should be isolated for at least three weeks upon arrival at the stud. Where this is not possible, in foal mares should be kept away from young stock and maiden and barren mares. In-foal mares should be kept in small groups according to their foaling dates.

Vaccination

In spite of the limitations of the available vaccines, it is still strongly recommended all mares are vaccinated against EHV1 and EHV4. Given the nature of the infections, particularly the existence of a carrier state and the short duration of natural immunity, the vaccine is not guaranteed to prevent infection. However, most vaccines, including those for Equine Herpes Virus, act by reducing the severity of clinical signs and the number of infectious particles released by the infected animal, thus reducing the risk of infection to others. Vaccination against EHV1 and EHV4 should be "herd based" i.e. all mares and in-contact young stock should be vaccinated at least every six months. All in-foal mares should be vaccinated at five, seven and nine months of pregnancy to help to protect them during the last trimester of pregnancy.

• *For further advice on control and what to do in the event of an abortion due to Equine Herpes Virus please see the HBLB Codes of Practice 2012 at www.hblb.org.uk.*

>> Events moved quickly in 1977 and a meeting was called during the December Sales at Tattersalls, where a group was set up to fight the disease which included David Pile of the Animal Health Trust, John David of Bristol University and Charles Frank, the Thoroughbred Breeders' Association veterinary advisor, as well as Donald Simpson, the veterinary surgeon dealing with the outbreak at the National Stud.

A decision was taken at that meeting that, at all costs, the disease should, if possible, be completely eradicated from the thoroughbred population.

VAC provides unique aid

The veterinary advisory committee of the HBLB provided funding for the necessary research work and the development of a strategic code of practice, which would involve the screening of both mares and stallions prior to service on at least three occasions to make sure that the disease was not present. Special small swabs which we now take for granted were developed to enable swabbing of the clitoral sinuses, and Edward Taylor discovered that the organism would survive well only if transported in a specific charcoal transport medium. Taylor's work on the organism was unique and was later acknowledged by the naming of the organism as Taylorella equigenitalis.

"The HBLB Code of Practice goes a long way to preserving the health of the equine population"

David Ellis, the recently retired senior partner of Newmarket Equine Hospital who was present and closely involved at the time of the outbreak, comments: "The HBLB serves an enormously useful function, being there and ready to jump in to help at a time of crisis. This kind of help is invaluable, indispensable really, and to be effective has to be delivered quickly. A concern is that the thoroughbred breeding industry cannot expect government money any more.

"More and more, the stakeholders in individual agricultural concerns are being asked to bear the costs involved in regulation of disease and in this context the Levy Board, and in turn the VAC, serve a unique function for the thoroughbred breeding industry.

"Without this help, of course, the industry could not maintain its standing in international racing, and its highly important export business, which sustain it and partially compensate for the comparatively low levels of prize-money when compared to the rest of the world."

The initial work in the late 1970s resulted in this voluntary code of practice for control of CEM, which has become the standard principle in dealing with venereal infection such as this in the thoroughbred. It is the recommendations of this code of practice which resulted in all thoroughbred mares being screened by swabbing of the reproductive tract prior to covering even to this day.

As further diseases have emerged the HBLB code of practice booklet has been expanded and now includes specific advice and guidance on what action to take in the face of Equine Herpes Virus (EHV), 'Strangles' and Equine Viral Arteritis. EHV caused significant losses in 1979, both from abortion and from the desperately debilitating paralysis that can sometimes ensue.

'Strangles' is an ever-present threat and can be disastrous if allowed to spread unchecked, both on the breeding farm and in the racing yard. Outbreaks in both situations have occurred in recent years but have been promptly and effectively contained because of the immediate adoption and implementation of the control measures listed in the HBLB Code of Practice booklet.

A sub-committee drawn up of distinguished scientists and veterinary surgeons with specific expertise in this area meets once a year to consider whether changes in these codes of practice have to be made in the light of changing circumstances. Although we all take these codes of practice for granted in dealing with disease outbreaks it has to be remembered that the original 'pump primer' for their development came from the HBLB Veterinary Advisory Committee.

"Horses are now able to move across Europe, particularly from Eastern Europe, without any special health requirements and diseases such as Equine Viral Arteritis, which we don't have here in the UK, are endemic in some of those areas," says David Ellis.

• *The HBLB Code of Practice document is moving to a new online format and can be found at http://codes.hblb.org.uk/*

New faces on the vet pages

Over the last three years, the Vet Forum has been ably compiled and written by James Tate, an accomplished veterinary surgeon who has now started his own racehorse training business in Newmarket. We thank James for his fascinating insight into the constantly developing world of equine veterinary science and wish him luck in his new role. We are delighted to welcome two new contributors to these pages.

Deidre M Carson BVSc (Syd), MRCVS
A Sydney graduate, Deidre started working at Rossdale and Partners in Newmarket 1983 and became a partner in 1996. She is Immediate Past President of the British Equine Veterinary Association and has a particular interest in stud medicine.

Rob Pilsworth MA, Vet MB, Cert VR, BSc (Hons), MRCVS
Rob has worked in thoroughbred racehorse practice in Newmarket for the past 25 years and is currently an Associate at Newmarket Equine Hospital (formerly known as Greenwood Ellis and Partners). He is also an associate lecturer at the University of Cambridge and sits on the Veterinary Advisory Committee of the Horserace Betting Levy Board. His special interests include equine lameness, diagnostic imaging and skin diseases.