ایفیمرل فیور (وِل) کی وباء کے متعلق ضروری ہدایات

UVAS
UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES LAHORE

Corporate Dairy Farmers Association

علاج:

اس بیماری سے متاثرہ جانور کو مکمل آرام دینا چاہیے اور (NSAIDs) جیسا کہ فیلوگزن میگلومن، فینائل بیوٹازون، میلاکسی کیم کا استعمال فائدہ مند ثابت ہوا ہے۔

پاکستان میں اس بیماری کو علامات کی مدد سے تشخیص کیا جاتا ہے۔ البتہ اس بیماری کی تشخیص کا حتمی ٹیسٹ بذریعہ PCR یونیورسٹی ڈایگناسٹک لیب، UVAS لاہور سے کروایا جاسکتا ہے۔

ڈیپارٹمنٹ آف ویٹرنری میڈیسن

یونیورسٹی آف ویٹرنری اینڈ اینیمل سائنسز

آوٹ فال روڈ لاہور

رابطہ

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ایفیمرل فیور کیا ہے؟

یہ گائیوں اور بھینسوں کا بخار ہے، جس کا دورانیہ تین دن تک رہتا ہے۔
یہ معاشی طور پر انتہائی اہم وائرل (Ephemerovirus) بیماری ہے۔
یہ بیماری افریقہ، ایشیاء اور مشرق وسطیٰ سمیت بہت سارے خطوں میں پائی جاتی ہے۔
باریہ پاکستان میں یہ بیماری کبھی کبھار دیکھنے میں آتی تھی لیکن 2014 کی گرمیوں میں پہلی وبائی صورت میں نمودار ہوئی اور مقامی ولائیتی گائیوں میں پھیل کر ڈیری انڈسٹری کو بری طرح متاثر کیا۔

بیماری کی منتقلی اور اثرات:

حشرات الارض اس بیماری کو پھیلانے کا سبب بنتے ہیں۔اس بیماری کے پھیلاؤ میں مچھر، کاٹنے والی مکھیاں اور چیچڑ کو حیاتیاتی ویکٹر تصور کیا جاتا ہے۔
چیچڑ اور مچھر جب متاثرہ جانور کو کاٹتے ہیں تو وائرس خون کے ذریعے ان میں منتقل ہو جاتا ہے۔ وائرس ان ویکٹرز کے اندر پرورش پا کر ان کے سلائیوا (تھوک) میں شامل ہو جاتا ہے۔ جب یہ ویکٹر اگلے جانوروں کو کاٹتے ہیں تو وائرس کے پھیلاؤ کا باعث بنتے ہیں۔ اس کے اثرات میں دودھ میں کمی، اسقاط حمل، بیلوں میں عارضی بانجھ پن اور کچھ جانوروں میں طویل بحالیء صحت اور تجارتی پابندیاں شامل ہیں۔ یہ بیماری قریبی رابطے، جسمانی رطوبتوں اور ہوائی بوندوں کے ذریعے منتقل نہیں ہوتی۔

بیماری کی علامات:

- تیز بخار (104 سے 107 ڈگری فارن ہائیٹ)
- دودھ کی پیداوار میں اچانک کمی
- لنگڑاپن
- ناک سے رطوبت کا اخراج
- سانس میں دشواری
- نبض کی رفتار کا بڑھ جانا
- ذہنی دباؤ وغیرہ

پوسٹمارٹم علامات:

یہ ایک سوزش کی بیماری ہے۔ پوسٹمارٹم کی اہم نشانیاں پھیپھڑوں اور دل کی جھلی میں رطوبت کا ملنا، جوڑوں کی سوزش اور اس میں رطوبت کا بڑھ جانا شامل ہیں۔ علاوہ ازیں غدودوں کی سوزش اور اس میں خون کے دھبے پائے جاتے ہیں۔

احتیاتی تدابیر:

اس بیماری کو مندرجہ ذیل ہدایات پر عمل کر کے قابو پایا جا سکتا ہے۔

- حفاظتی ٹیکہ جات
- حیاتیاتی ویکٹر (مکھی، مچھر اور چیچڑ) کا کنٹرول
- جانوروں کی نقل وحرکت پر پابندی
- جانوروں کی مستقل نگرانی

IV. Herd Monitoring

a. Feed and water consumption and production should be carefully monitored at all times.
b. Typical sounds and behaviors of individual animals should be monitored
c. Temperature of randomly selected animals should be monitored.

V. Biosecurity

a. Strictly adhere to all farm biosecurity measures.
b. Do not allow visitors during the outbreak
c. Restrict the entry of service personals and vendors.
d. Disinfect farm and farm premises using disinfectants (2% Virkon or Pyodine or 5% Bleach)

TREATMENT STRATEGIES

(I) Therapeutics

a. Early detection of the clinically sick cases through continuous monitoring (Cardinal signs such as drop in milk production, fever, dull, depressed, off feed, increased respiration, lameness and staggering gait to recumbency)
b. Administration of non-steroidal anti-inflammatory drugs such as Phenylbutazone / ketoprofen / flunixin meglumine at recommended doses and route
c. Immune boosters such as Vitamin E and Selenium preparations (E-sel / Selevit)
d. Calcium therapy if needed (calcium borogluconate / Milfone-C, I/V at recommended dose)
e. Antibiotics to control secondary bacterial infection like Ceftiofur sodium at recommended doses
f. Cold water therapy on body to lower body temperature
g. Follow single needle use policy when treating or vaccinating the cows.

(II) Nutrition and Environmental Management

a. Level of calcium, selenium, vitamin C and vitamin E may be increased in the ration of animals.
b. Density of animals may be reduced. Overcrowding of the animals may be avoided. Disease normally followed rainy season due to hot humid climate

(III) Isolation of sick cows

Keep the infected/diseases animals in isolation and don't allow them to mix with healthy ones.

(IV) Management of recumbent cows

a) Nursing care- Animals that have gone down should be provided with adequate shelter, water and food, as cattle left exposed in hot weather are much more likely to die.
b) BEF can impair the swallowing reflex, so affected animals should not be drenched or force fed.
c) Recumbent cows are rolled over several times a day to help avoid loss of circulation to the underside limbs, which will result in permanent muscle damage.
d) Ensure that animal is in sternal position. Cattle that go into lateral recumbency (lying flat) can bloat and die or aspirate rumen fluid which can cause pneumonia.
e) Place sand bags, hay bales to prop up animals that cannot remain sternal without assistance.
f) Calcium injections- if given early in the course of the illness, can be very effective in helping an animal regain its footing.

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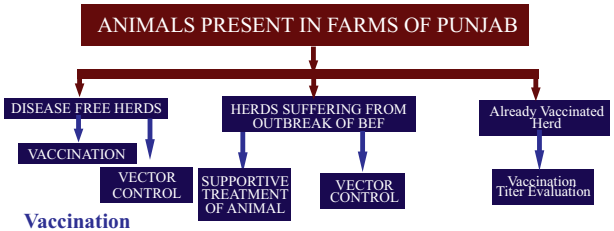
via virus isolation and serology.
For serology paired sampling is required (one during acute phase and second after 2-3 weeks later. For RT PCR based diagnosis, whole blood with anticoagulant is required. Currently UDL is only offering the PCR based diagnosis of BEF. Three to five ml of clinical case (during febrile phase) of suspected animal's blood with anticoagulant is required for diagnosis. Sample should be transported on ice to UDL by maintaining the 2-8 C sample transportation temperature

Other Diseases/conditions to rule out?

Hyperthermia
Lameness due to limb injury or due to any problem in hoof.
Shipping fever/ *Pasteurella*

CONTROL MEASURES



(1) Vaccination

a. All animals on the farms above 6-months of age may be primed using live attenuated BEF vaccine (2mL/animal, S/C) at the start of summer. Make sure vaccine is not expired or storage and handling requirements should be strictly adhered.
b. Booster dose of vaccine 4 weeks post-priming using same dose and route as mentioned above
c. Annual booster of vaccine using live attenuated BEF vaccine.

(II) Vector Control

a. The BEF virus spreads through biting flies, mosquitoes and midges.
b. Fly repellents such as Cypermethrin mixed with liquid paraffin.
c. Apply Pour-on method from head to tail. Repeat after every 7 days
d. Spray of Seguvan / Neguvon @ 0.1% on breeding places of vectors (floors, walls, manure, slurry, etc)
e. Remove stagnant water from the dairy farm.
f. Fly count through use of white paper at various sites of farm just to check the effect of fly repellents. (Count the fecal marks on the paper)
g. Proper disposal of manure / slurry.

Control of Ticks and Their Monitoring

a. Weekly spray of cypermethrin on farm
b. Application of lime on dry floors
c. Filling of crevices (Breeding sites) on floors / walls, etc
d. Elimination of wooden structures on floors
e Monitoring of tick presence on animals to see efficacy of control strategy

Monitoring and control for blood parasites

a. Animals are often having subclinical of blood parasites that may be t the prime caus of vaccination failure.
b. Monitor the herd for hemoparasites through random selected samples.
c. If a herd or particular group of cows is positive for blood parasites, treat as per nature of the disease.

III. Movement restriction

a. Movement of cattle from infected herd or area should be strictly prohibited during the course of outbreak/epidemic.
b. Avoid new purchases and introduction of new animals into the herd. (if necessary, put all new purchases to strict quarantine)

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BOVINE EPHEMERAL FEVER (BEF) OUTBREAK INVESTIGATION SURVEY

FORM

1. Name of Farm : _____

2. Location of Farm: _____

3. Name of Contact Person: _____

Phone No. _____ Email: _____

4. Type of farm: Traditional rural Closed Open

5. Total number of Animals at farm : _____

6. Type of Animals: Local Local cros sbred Exotic crossbred

Pure Holstein -Fri esian Swedish Holstein -Fri esian

Others _____

7. Is BEF reported at the farm: Yes No

7a. If yes, then how the disease was confirmed ? a) Based on clinical symptoms b) Postmortem lesions c) Laboratory based diagnosis (ELISA or RT -PCR)

8. If Yes, when first case of BEF was reported: _____

8a. Any other livestock farms in surrounding area? Yes No

8b. If yes, then how far it is? _____ _____ _____

8c. Was there any outbreak of BEF during the last year? Yes No

8d. Did you have proper farm biosecurity at the time of BEF out break ? Yes No

9. Which group of animals was affected with BEF ? (Please complete the following table)

Group	Status	Total animals	Vaccination of BEF		No. affected with BEF	Mortality (if any)	Previously affected with BEF (Y / N) If Yes, mention year
			Before shipping (Y / N)	After arrival (Y / N)			
Dry cows	Non-pregnant						
	1-3m pregnant						
	4-6m pregnant						
	7-9m pregnant						
Pregnant heifers	Imported						
	Locally born from pregnant imported dams						
	Locally born from locally inseminated dam						
Non-pregnant heifers	Imported						
	Locally born from pregnant imported dams						
	Locally born from locally inseminated dam						
Lactating cows	1st lactation						
	2nd lactation						
	3rd lactation						
	4th lactation						
Female young stock	1-3m old						
	4-6m old						
	7-12m old						

9a. If there was any mortality due to BEF, what did you do with the died animal? Burry them
Leave them openly Any other , please specify _____

10. Did you vaccinate your animals before the outbreak?

10a. If yes, which t ype of BEF vaccine was used: Killed Live attenuated

10b. If not, then please indicate the reason that why don't you vaccinate your animals against BEF?

Vaccine is too expensive BEF vaccine is not available I don't know about vaccine Other

reasons, please specify_____ ____

11. Manufacturing company of BEF vaccine: _____

11a. Was the cold chain maintained during the transportation? Yes No

11b. Did you get all the animals vaccinated against BEF? Yes No

12. Whether the animals were given booster of BEF vaccine : Yes No

13. Date and Time of BEF vaccination: Single short: _____ (Morning, Afternoon, Evening)
Booster: _____(Morning, Afternoon, Evening)

13a. Did you use any insecticides for mosquito control at your farm? Yes No

13b. Did you purchase any animal few days/weeks before the outbreak ? Yes No

13c. If yes, did you follow quarantine measures? Yes No

13d. Did you share any farm equipment with any other farm? Yes No

14. What types of clinical signs were observed ? (Please tick " √" relevant box)

Groupf animals	Clinical signs observed						
	Fever	Respiratory distress / open mouth breathing	Nasal discharge / ocular discharge	Head shaking / shivering	Lameness / stiffness	Subcut emphysema	Recumbent (sternal or lateral)
Dry cows							
Pregnant heifers							
Non-pregnant heifers							
Lactating cows							
Young stock							
Suckler							
Weaner							
Grower							
Bulls							

15. Which type of postmortem lesions were observed? (please tick " √" relevant box)

Group	Post Mortem Lesions					
	Pulmonary emphysema	Fluid in body cavities	Blood in Trachea	Hemorrhag on heart	Edema of lymph nod	Subcut emphysem at withers
Dry cows						
Lactating cows						
Heifers						
Young Stock						

16. What type of treatment was given?

Type of dru	Name of salt	Response to treatm		Remarks
NSAIDs				
Antipyretic				
Antibiotic				
Selenium+Vi				
Steroids				
Fluid therapy				
Any other (please speci				

MEASURES REQUIRED TO HANDLE THE RECENT OUTBREAK OF BOVINE EPHEMRAL FEVER

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MEASURES REQUIRED TO HANDLE THE RECENT OUTBREAK OF BOVINE EPHEMRAL FEVER

Bovine Ephemeral Fever (BEF);
What you need to know and what you need to do?

Synonyms: Three-day-sickness, Bovine enzootic fever, Vill.

Why BEF important?

Bovine ephemeral fever (BEF) is an economically important viral disease of cattle and water buffalo. This disease occurs in many regions including Africa, Australia, Asia and the Middle East, often in sweeping epidemics. In Pakistan, outbreaks of BEF on commercial dairy farms were reported first times in 2014. Its impact includes lost production (decreased milk yield), loss of condition, abortion, temporary infertility in bulls, prolonged recovery in some animals and trade restrictions.

What causes BEF?

Bovine Ephemeral Fever (BEF) is caused by the Bovine Ephemeral Fever Virus (BEFV), a member of the genus *Ephemerovirus* in the family Rhabdoviridae.

How BEF is spread?

The source if infection is the animal with clinical disease and biological vectors (arthropods). Vectors play important role in the transmission of infection. BEFV has been isolated from a mixed pool of Culicine and Anopheline mosquitoes, as well as *Anopheles bancroftii,* and from *Culicoides* (biting midges). Mosquitoes are suspected to be the most important biological vectors. The disease can also be spread by intravenous inoculation of small amounts of blood. Bovine ephemeral fever is not transmitted by close contact, body secretions, or aerosol droplets.

Which age group at risk?

Calves age group less than 6 month of age are least prone to infection.
Over conditioned animals, fresh cows and bulls are affected the most.

Clinical Signs

Signs of bovine ephemeral fever, which occur suddenly and vary in severity, can include:

- Sudden decrease in milk yield
- Biphasic to polyphasic fever (104°F to 107°F)
- Shivering
- Inappetence
- Tearing
- Stiffness and lameness
- Serous nasal discharge
- Drooling
- Pulmonary emphysema/open mouth breathing
- Increased heart rate
- Tachypnea or dyspnea
- Atony of forestomaches
- Depression

Post Mortem Lesions

BEF is an inflammatory disease. The most common lesions include fibrin–rich fluid in the pleural, peritoneal and pericardial cavities. Variable amounts of fluid in joint capsules. Serofibrinous polysynovitis, polyarthritis, polytendinitis, and cellulitis are common. Patchy edema may be apparent in the lungs and lymphadenitis is often seen. Petechial hemorrhages or edema may be found in the lymph nodes. Areas of focal necrosis are common in the major muscle groups.

Morbidity and Mortality

BEF can occur as localized outbreaks or in seasonal epizootics. During epizootics, the pattern of spread seems to be influenced by the prevailing winds. Most cases are seen in the summer and early fall, and outbreaks are often associated with high rainfall.

The morbidity rate is highly variable, and can be as high as 80% or as low as 1-10%. Morbidity varies with the age and condition of the animal, as well as any immunity it may have. The mortality rate is 1-2% in most outbreaks, but it can be as high as 30% in cattle.

How to Diagnose BEF?

Diagnosis of BEF is currently based on three types of testing

a- Serology
b- Virus isolation
c- RT PCR

Diagnosis is normally made on the basis of clinical ground during major epidemics. Cases during early epidemic and sporadic cases can be confirmed via