

New Insights in Different Animal Systems, Clinical Relevancy and Medical Diagnosis through Advance Technology

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Abstract

Newcastle disease is caused by paramyxoviruses, very infectious disease present in birds harms most. Clinical and electro-physiological findings in the patients of SMA revealed that the patients experience critical decline in the functions of motors with unit loss rapidly. Tumors of heart in dogs typically represents either non-functional chemodectoma or ectopic thyroid carcinomas which is also non-functional. Spontaneous-malignant-lymphoma present in sheep, through well known in tumor investigations in the slaughtering houses and in the diagnostic workshops. The hallmark clinical finding in cases of external caseous lymphadenitis is the development of abscesses in the region of peripheral lymph nodes. Anthrax is a disease which is usually spread by feeding and by the contaminated water with the spores and these spores can last in the soil for several years. Mostly the anthrax is cured easily in start stages and is easy way and control to further increase of this disease. Orf is the disease commonly present in sheep and goats throughout the world. It also known as scabby mouth or sore mouth. The outlook for Orf sickness, which is a zoonotic host switch infection, is not especially bad. There are different parasitic diseases of animals, coccidiosis is one of the parasitic disease of poultry and rabbits.

Keywords: Animals diseases, mouth diseases, anthrax, clinical medical laboratory investigation.

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INTRODUCTION

Livestock is the major contribution in any country GDP. For domesticated animals, parasitic and infectious diseases dominate and causing bad effects in the production of meat and milk. Some degenerative and metabolic ailments are present in animals which are entirely concerned with the production system [1, 2]. A

disease called Newcastle-disease caused by para myxo virus's a very infectious disease present in birds harms most. The birds exaggerated by the paramax are guinea fowl, turkeys, ducks, fowls, partridges, geese, pheasants and other captive and wild birds, together with ratites such as emus, rhea and ostriches [3].

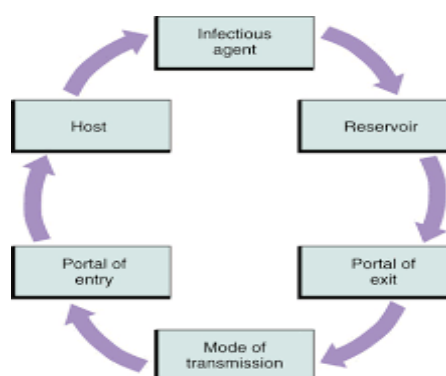


Fig-1: Shows the events of different risk factors for animal disease transmission

Clinical relevancy of Atrophy and associated factors

Atrophy a disease occurred in the tissues of animals which cause tissue wasting, due to this disease the number and size of functional cell reduced, for example, inbred muscular dystrophy in chickens [4]. MSA (Multiple system atrophy) is uniting term which combine a group of fatal, rare neuro-degenerative disorders which are OPCA (olivopontocerebellar atrophy), Shy-Drager syndrome and striatonigral degeneration. These disorders have the same brain-pathologies and are categorized by several steps of corticospinal degeneration, autonomic dysfunction, parkinsonism and cerebellar abnormalities.

Preclinical investigations have shown that the deficiency of SMN harms motor system components, including motor-neurons. Clinical and electrophysiological findings in the patients of SMA revealed that the patients experience critical decline in the functions of motors with unit loss rapidly after the onset of symptoms and it leads to the proper malfunctioning of motors [5, 6].

Moreover, atypical characteristics which propose non idiopathic ailment like autonomic failure, pyramidal signs, poor responses to the levodopa, cerebellar incoordination and severe immobility all these take numerous years becoming evident. Nevertheless, as the diagnosis and response of treatment is different for the patient with MSA compared with the PD [7].

Role of Cardiac Tumors

Hemangiosarcoma is cancer affects the blood vessels. When the cancerous tumors increased, abnormally delicate blood vessels formed, which eventually breaks and open with bleeding. This type of cancer is most common in the dogs and very less in people. Hemangiosarcoma HSA is cardiac tumor commonly present in the dogs. Diagnosis is frequently plausible, and depend on imagery findings and structural location. HSA generally a mass which effects the right atrium [8, 9].

Tumors of heart in dogs typically represents either non-functional chemodectoma or ectopic thyroid carcinomas which is also non-functional. In very less cases etiologies involves hemangiosarcoma and other sarcomas. The chemodectoma is becoming common in the brachycephalic breeds like Boxers, Pugs and Boston Terriers. The chemodectoma starts from peripheral chemoreceptors present in aortic arch which sense the presence of arterial blood, carbon dioxide, pH and oxygen [10, 11].

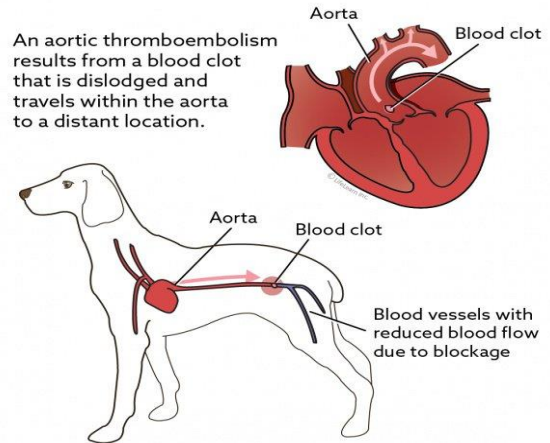


Fig-2: Shows the mechanism of action to understand the cardiac tumors

Auscultation of cardiac mumble indicated that the presence of physiologic change like elevation in cardiac output or structural cardiac disease. A heart mumble is produced by the turbulent flow of blood which can be auscultated by stethoscope. The situation during which the turbulence (occurrence of murmur) occur can be described by Reynolds-Number ($Re = (\text{mean velocity of blood flow} \times \text{vessel diameter} \times \text{blood density}) / \text{blood viscosity}$). When the critical Reynolds-number is surpassed, resultant murmur or turbulence will occur [12, 13].

Clinical relevancy of Lymphosarcoma

Neoplastic-transformation in the member of lymphocyte cell lines cause unregulated clonal extension of these cells. The transformation cause is usually indefinite; in infrequent cases, particularly in the flock outbreaks in sheep's, it may be due to the association with the bovine leukemia virus, which occurred by experimentation and with administration of the whole blood anaplasma vaccines [14, 15]. Spontaneous-malignant-lymphoma present in sheep, though well known in tumor investigations in the slaughtering houses and in the diagnostic workshops.

The hallmark clinical finding in cases of external caseous lymphadenitis is the development of abscesses in the region of peripheral lymph nodes. Common sites of development include the submandibular, parotid, prescapular, and prefemoral nodes. Less commonly, abscessation of supramammary or inguinal lymph nodes occurs [6, 17].

Clinical relevancy of Anthrax

Anthrax is a disease which is usually spread by feeding and by the contaminated water with the spores and these spores can last in the soil for several years. When anthrax was employed as a bioweapon in 2001, it became well-known. Powder form anthrax spores were distributed through the mail in the United States. Anthrax is a very fatal disease of animals which leads

to death of animals [18]. There are many harmful symptoms of anthrax, the primary symbol of this disease is sudden death of grazing animals and it is concerned with the blood discharge. Anthrax is a very dangerous disease in animals especially for the goats. In goats this ailment is primarily characterized by the splenomegaly, septicemia, and sticky infiltration of the

subserosal tissues. This disease is generally known as splenic fever, woolsorter disease, milzbrand and charbon. By eating the improper cooked meat of any animal, the gastrointestinal anthrax infection occurred which is very harmful. It affects badly to gastrointestinal tract from throat to colon [18].

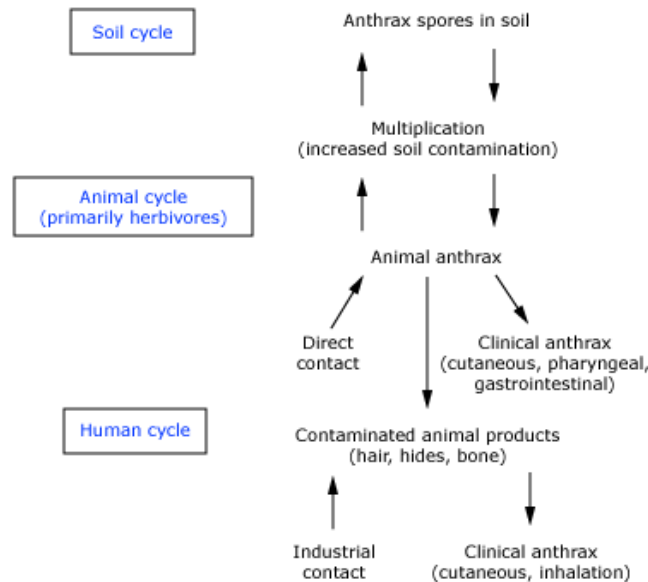


Fig-3: Shows the anthrax cycles with different events

Anthrax is quite infrequent in developed countries. However, because the bacterium has been utilized in bioterrorism assaults in the US, the disease remains a threat. Typically, by the medical signs. Certified method of diagnosis is by checking the sample of skin lesions, body fluids, spleen or the lymph nodes. Fluorescent antibody stains, PCR testing, and Bacterial culture to indicate the agent in blood films or tissues are examples of specific diagnostic techniques.

Some reference laboratories provide antibody detection assays such as ELISAs and Western blots. If no other tests are available, fixed blood smears stained with Loeffler's or MacFadecan stain can be used to see the capsule; nevertheless, this method can result in up to 20% false-positives [18-20]. Mostly the anthrax is cured easily in start stages and is easy way and control to further increase of this disease. Dermal (skin) anthrax can easily be diagnosed by common antibiotics like tetracycline, ciprofloxacin, erythromycin and penicillin [20].

Clinical relevancy of Orf

Orf is the disease commonly present in sheep and goats throughout the world. It also known as scabby mouth or sore mouth. This disease is usually caused by It is caused by a virus called para poxvirus, due to this disease blisters are formed on the mouth, muzzle and on lips. After few days these blisters are

changed in to scabs. Orf was spotted in Europe for the first time in 1920. The pathogen's major geographical position is still unknown, although it is thought to be widespread globally because orf is found in all locations where sheep occur. The disease has been recorded in the USA, Korea, Argentina, Japan, Germany, India, China, Egypt, and Malaysia, the sheep sector highly disturbed due to this disease [21-23].

Orf disease is commonly present in young animals and cause difficulty in grazing and feeding. Most of the animals recovered from this disease within one month but may get reinfected. The first lesion is formed in lips mucocutaneous-junction and around the incisor teeth and then extends to buccal cavity mucosa. Infrequently, the lesions are formed on feet and round the coronet, where secondary infection of bacteria with *Dermatophilosis congolensis* usually causes the strawberry foot rot. People may also be infected by the orf due to direct contact with the infected animals or by the contact with the things which are contaminated by this virus. Some of the animals not have the evident lesions but they are infected by the virus and can spread the virus easily. There is currently no global standard for the assessment of amniotic aphthous ulcer, which is mostly dependent on clinical signs and laboratory testing [24-26].

The outlook for Orf sickness, which is a zoonotic host switch infection, is not especially bad. The lesions are self-limiting, and symptoms in immunocompetent individuals will heal spontaneously within a 4- to 6-week time frame. That is not always the situation in immunocompromised patients. Damp, manure, dark corners, filth and stagnant water are the favorable places for breeding of infectious insects and these places should be clean and in concentration for cleaning and removing wastes frequently. Mites and ticks' eggs are deposited in the cracks and in the holes in walls, wood work and the floors of animal shelters should be cleaned periodically [26, 27].

There are different parasitic diseases of animals, coccidiosis is one of the parasitic disease of poultry and rabbits. This disease causes major economic loss to the rabbits and poultry breeding industries. Echinococcosis is also a parasitic disease which is a huge threat to sheep and cattle breeding and also threat for the health of herdsmen in rural areas. The prevention and vaccination for these parasitic diseases is necessary but unfortunately the vaccination process is in its infancy, and the very less vaccines for these parasitic diseases are available in the market. Additionally, the drug resistance causes a major difficulty to curing the parasitic disease [28, 29].

Advancements and control of animal diseases

Animal disease outbreaks and spread are on the rise around the world due to more international transactions and frequent long-distance traveling, causing massive losses in animal husbandry and posing a threat to the human health, food safety and public hygiene as well as threatening ecological security in some cases. For the control of many lethal diseases the vaccination is very helpful and it is effective and efficient disease control process. Vaccination, on its alone, will seldom provide the intended outcomes unless it is part of a comprehensive control strategy that includes a variety of strategies [5, 30].

CONCLUSION

Training and education of veterinary should be necessary, more concentration must be placed on training and on practical and qualitative aspects. To control the lethal diseases in animals, adequate planning, effective personnel development and better training is necessary. The courses taught to the undergraduate and postgraduate should be improved and having all the knowledge about the veterinary. The labs should be well furnished and having all the equipment's which are obligatory for breeding purposes. New technologies should be adopted for breeding and making the new breeds disease free.

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