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Iron Deficiency in Animals

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INTRODUCTION

Iron deficiency anemia is caused by primary or secondary deficiency of iron in animals and is characterized by pale mucous membrane, anorexia, general weakness and depression. It is not very common in farm animals because common feed and fodder contain sufficient amount of Fe. Younger animals are more prone to the disease however there is more problem in piglets.

Etiology:

It can be caused by either primary or secondary deficiency of iron. It occurs primarily in neonates reared on dam's milk. If dam is deficient then newborn will be naturally deficient. Secondary causes - If there is excessive drainage of iron from the body like hematuria, haemoglobinuria or blood loss due to accident or may be due to decrease in bioavailability of iron for haemoglobin formation as seen in vit A deficiency.

The disease is more common in early life of suckling piglets in intensive management. Sow milk contains 1mg of fe /l of milk but daily requirement is 7 - 16 mg /kg of bwt for their normal growth if No supplementation of fe to piglets and reared on milk diet these can lead to Fe deficiency.

Epidemiology:

Disease is more commonly seen in piglets of 3 to 8 weeks of age because piglets have reserved iron in liver upto 3 weeks of age, however condition can also occur in new borns. It results from decreased production of uteroferrin after 70th day of gestation in sows when fetal growth is maximum.

Clinical findings:

Pale mucous membrane and roughness of hair coat, anorexia, general weakness, dyspnea (spasmodic breathing in piglets called Thumps), whitish skin and depression. In Piglets there is puffed appearance (edema of face and forequarter). Affected animals get tired even after light work and exercise. There is decrease resistance against infectious diseases, reduced weight gain in growing animals. Anemia along with diarrheoa is quite common in neonatal piglets.

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Diagnosis :

1. Clinical signs like pale mucous membrane and roughness of hair coat, anorexia, general weakness
2. History - History of bleeding, parasitism etc.
3. Clinical pathology -

a. Microcytic hypochromic anemia (MCV, MCHC values)
b. Hb content (in pigs 10mg/dl is normal) Clinical symptoms will apear if hb runs down below 5mg/dl
c. Decrease in total erythrocytic count (TEC) from normal 5-8 X 10^6/µl of blood to less than 4 X 10^6/µl of blood
d. By detecting serum ferritin level 100µg/l, Total iron binding capacity (high) levels

Differential diagnosis :

1. Elimination of non nutritional causes of anemia like parasitism, haemorrhages and enteric ulcerations
2. Copper deficiency
3. Vitamin A deficiency

Treatment :

Orally or parenteral administration can be done.

- Orally - electuray (5 g of FeSO4 + 0.3g of CuSO4 + 5g of MgSO4 + 20g of pulv nux vomica and gentian in about 100 g of molasses). (for horses) ; For cattle - 25mg of CoCl2 is also mixed.Care to be taken as unusual harmful reactions can be there in horses after parenteral administration.
- For Dogs - 2ml imferon i/m is administered on alternate days for 2 weeks.
- For Piglets intramuscular injection of Iron dextran with dose rate of 1mg/kg bwt.

Prevention and control :

1. Teat painting in case of sows - FeSO4+ CuSO4 + sugar and water
2. Iron can also be provided in piglets' drinking water 1.8% Ferrous sulphate @ 4ml/day for seven days start from birth onwards.
3. Use of iron licks/blocks
4. i/m administration of iron dextran (100-200mg) once and repeat after 3-6 weeks
5. Supplementation of sow ration with 2g iron daily.

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