BOVINE NEONATAL PANCYTOPENIA - AN EMERGING DISEASE IN EUROPE - CLINICAL SIGNS, HAEMATOLOGY AND PATHOLOGY

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An unexplained haemorrhagic disorder of young calves, Bovine Neonatal Pancytopenia (BNP), has appeared in Europe since 2007. BNP affected 14 beef calves born between March 2009 and April 2010 in a 210-cow Scottish beef herd; only one calf survived. During both calving seasons the cows appeared clinically well and calved normally, giving birth to apparently healthy calves of a good birth weight. The abortion rate was < 3% and neonatal mortality (excluding BNP cases) was 2%.

Clinical signs included bleeding from the nose, gastrointestinal tract, gum margins, injection and ear tag punctures. Petechial haemorrhages were present on the gums and ventral aspect of the tongue. Calves were pyrexic but initially remained bright and alert. They deteriorated progressively, with death < 7 days after onset of clinical signs in 13 of 14 cases. One calf showed no signs of external bleeding but was pyrexic, lethargic and dyspnoeic, with marked haemorrhage into the lung parenchyma.

Ten calves blood sampled at the onset of clinical signs, showed a profound thrombocytopaenia (mean < 6x10⁹/L) and leukopaenia (mean 1.7x10⁹/L), with both neutropaenia and lymphopaenia. Nine of the ten calves had a normocytic, normochromic non-regenerative anaemia. Prothrombin and activated partial thromboplastin times measured in two calves were within the normal range. Four of the calves were blood sampled at < 24 hours old, prior to the onset of signs, and all had normal haematology.

Whole blood transfusion (1-2 litres) was undertaken in three calves, one of which survived. The surviving calf showed a progressive increase in thrombocyte (168 x10⁹/L), lymphocyte (3.02 x10⁹/L) and neutrophil count (7.17 x10⁹/L) at day 14.

Necropsy of 12 calves revealed multifocal petechial, ecchymotic and suffusive haemorrhages throughout the lungs, spleen, thymus, epicardium, endocardium, meninges and serosas of abomasum, rumen and gastrointestinal tract. Haemorrhages were also evident on the mucosal surfaces of the gastrointestinal tracts with areas of marked intraluminal haemorrhage and melaena. All findings are consistent with bleeding diathesis due to thrombocytopaenia. Bone marrow histopathology from all twelve calves showed marked depletion of haematopoietic cells giving a diagnosis of idiopathic hypoplastic pancytopenia.

As yet no aetiology has been determined and investigations are ongoing.