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Association of Diffuse Alveolar Haemorrhage with Acquired Vitamin K Deficiency

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The causes of diffuse alveolar haemorrhage (DAH) are numerous. However, intensive search for an aetiology sometimes ends up negative [1]. A case of DAH associated with malnutrition, antibiotic treatment and anticoagulant therapy is reported. A 61-year-old male presented with dyspnoea, fever (39.8°C), bilateral infiltrates on a chest radiograph and hypoxia at rest. He was under oral anticoagulant therapy (phenprocoumon: a coumarin derivate and vitamin K antagonist). The international normalised ratio (INR) appeared to be above the target value, without signs of bleeding complications. Screening for autoimmune disorders was negative. A pulmonary infection was considered. Despite the initiated antibiotic treatment (e.g. a combination of amoxicillin with clavulanate), the patient's clinical condition further deteriorated. The diagnosis of DAH due to a relative vitamin K deficiency was considered by combining clinical features with the opacities on the chest radiograph, iron deficiency anaemia and bronchoalveolar lavage fluid cellular analysis which showed haemosiderin-laden alveolar macrophages without evidence of a pulmonary infection or another interstitial lung disorder [1]. Vitamin K_1 supplementation (2 mg orally, twice a week) was started as well as prednisone (initial dose 40 mg daily, tapered of in 1 week). Thereafter, the patients' clinical condition improved dramatically. Follow-up examination after 1 year was unremarkable.

Anticoagulants such as heparin and oral anticoagulants as well as anticoagulant rodenticides have been reported as aetiologies of DAH [2]. It is known that malnutrition and/or antibiotic treatment [3, 4], especially together with anticoagulation therapy [5], are risk factors which can induce haemorrhages probably due to direct interference with vitamin K metabolism. Recognition in time is important because iron induces free radical damage to the lung and reversal of (excessive) anticoagulation is life-saving.

In conclusion, in case of unexplained infiltrates in critical ill patients, DAH due to vitamin K deficiency should be considered. Sufficient prophylactic administration of vitamin K_1 to patients at risk may prevent severe damage in these cases.

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