

A Fatal Infection Caused by *Streptococcus Equi Zooepidemicus*: An Emerging Pathogen for Humans

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To the Editor

Streptococcus equi subspecies *zooepidemicus* (*S. zooepidemicus*) is an emerging zoonosis [1]. It is an opportunistic commensal in horses and it can rarely cause disease in humans who have contacts with animals (horses, cattle, sheep, pigs, dogs, cats) or following consumption of unpasteurized milk products [1-3]. It can cause a severe and potentially fatal disease [1,4].

We here report a case involving a 51-year old Caucasian man who was admitted to hospital on 23th December 201, because of a severe and persistent bilateral inguinal pains, irradiating to both legs, lasting from 6 hours. He reported a single febrile episode the day before, successfully treated with paracetamol. On admission, the patient was afebrile, alerted and oriented. His heart rate was 80 beats/min and the blood pressure was 120/ 70 mmHg. Blood tests were as follows: C-reactive protein 25.6 ng/ml (reference <5), white blood cell count 6050 cells/ml, hemoglobin 12.6 gr/dl, platelet count 53000 cells/mmc (in line with previous values, reference 140.000-400.000), creatine phosphokinase 113.000 U/L (reference <240), mioglobin 17204 ug/L (reference <72) and aspartate transaminase 1810 U/l (reference <40). The renal function and the electrolytes were within normal range. Clinical examination was unremarkable, in particular no skin lesions were detected. A CT scan of the thorax and abdomen showed a pulmonary infiltrate in the left lung, hepatomegaly and splenomegaly (consistent with previous report), with hypertrophy of the ileo-psoas and left medius gluteus muscles, along with a subcutaneous hyper density in the left buttock. The Magnetic Resonance Imaging showed an interstitial edema of the ileo-psoas muscles, while, in the pelvis, a bilateral edema of the adipose tissue was present without any fluid level.

After blood cultures, the patient was empirically started on intravenous vancomycin (500 mg qid) plus meropenem (1 gr tid) and referred to intensive care unit because of the rapid clinical deterioration, where he died 12 hours after admission. Blood cultures yielded Lancefield group C *Streptococcus equi* (subspecies *Zooepidemicus*) 24 hours later with the antibiogram showing susceptibility to penicillin, ciprofloxacin, vancomycin and resistance to clindamycin. The patient suffered from HCV-related liver cirrhosis (Child-Pugh A) and had a history of urethelial carcinoma (currently in clinical remission) and in 2013 he was admitted to hospital for decompensated liver disease and sepsis caused by *E. coli*. He has been working as a horse keeper in a riding stable and he was also involved in cleanings of equine urine and feces.

In humans the disease caused by *S. zooepidemicus* may have a proteiform clinical presentation as it may cause pneumonia, meningitis, endocarditis, endophthalmitis, skeletal involvement with and without sepsis [4-7]. In some case, as in ours, the absence of fever, the mild increment of inflammation markers and persistent pains with severe rhabdomyolysis require a high index of suspicion. Antimicrobial treatment includes penicillin G or cephalosporins as treatment of choice for group C streptococcus infections, although gentamicin or rifampin in combination with a beta-lactam antibiotic or vancomycin may have a synergistic effect [8]. The mode of transmission to humans includes close contact (areal or skin contact?) or ingestion of unpasteurized milk or dairy products from infected animals [1-3]. Clinicians should be aware of this emerging, uncommon and potentially life threatening condition, mostly (but not limited to) involving persons with close and continuous contacts with horses.

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