Aggravation of pathogenesis mediated by ochratoxin A in mice infected with Trypanosoma brucei rhodesiense

Abstract:

Mice fed 1·5 mg ochratoxin A (OTA) per kg body weight and infected with Trypanosoma brucei rhodesiense were compared with trypanosome-infected placebo-fed and uninfected OTA-fed controls. Uninfected OTA-fed mice showed fever, lethargy, facial and eyelid oedemas, mild hepatitis and nephritis, and high survival. Infected placebo-fed controls had mean pre-patent period (PPP) of 3·26 days, lethargy, dyspnoea, fever, facial and scrotal oedema, survival of 33–65 days, reduced red cell counts (RCC: 10·96–6·87×106 cells/µl of blood), packed cell volume (PCV: 43·19–26·36%), haemoglobin levels (Hb: 13·37–7·92 g/dL) and mean corpuscular volume (MCV) of 37·96–41·31 fL, hepatosplenomegaly, generalized oedemas, heart congestion, hepatitis and nephritis. Compared to infected placebo-fed controls, infected OTA-fed mice had significantly ($P<0·05$) shorter mean PPP (2·58 days), reduced survival (6–47 days), more pronounced fever and dyspnoea. The latter had significantly ($P<0·05$) reduced RCC (10·74–4·56×106 cells/µl of blood), PCV (43·90–20·78%), Hb (13·06–5·74 g/dL), increased MCV (39·10–43·97 fL), severe generalized oedemas, haemorrhages, congestion, hepatic haemosiderosis, hepatitis, nephritis, endocarditis, pericarditis and exclusively, splenic macrophage and giant cell hyperplasia, expanded red pulp and splenic erythrophagocytosis. It was concluded that OTA aggravated the pathogenesis of T. b. rhodesiense infection in mice, and should therefore be taken into consideration during trypanosomosis control programmes.