

Study of the presence of *Echinococcus* cysts in bovine carcasses, in the Public Slaughterhouse of Tirana

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Introduction

Hydatidosis is the most important zoonotic disease of global prevalence. It causes considerable public human health and economic losses throughout the world, including Albania. Echinococcosis is part of diseases in the OIE list and for this reason it should be reported by member states according to the OIE code.(1). The problem for this disease is related to human transmission (consumption of meat); economic losses (confiscation of organs and reduction of carcass quality), poor increase of productive animals, reduction of milk and meat production. Echinococcosis has an irregular geographical distribution in Europe. Very low prevalence is found in some northern and central European countries and higher in eastern and southern European countries (2)

In slaughterhouses the post mortem inspection and completion of the slaughter process card is done through the discovery of:

- abnormalities in the structure (abdominal swelling due to increased cyst volume)
- respiratory abnormalities when cysts are installed in the lungs,
- inter due to liver cysts and bile duct blockage

AIM

This study aims to determine incidence of *Echinococcus* cysts in bovine carcasses in a public slaughterhouse of Tirana, Albania.



Figure 1. Hydatid cyst in lung

Material and method

The study was conducted in the Public Slaughterhouse of Tirana, in Arbana,. The study sample included 104 cattle that were slaughtered and inspected during May 2019, in the aforementioned slaughterhouse. The study also included the data from the veterinary inspection registers, where 954 cattle, were slaughtered and inspected, during the period June 2018 - April 2019..

Specific checks were undertaken for each carcass that entered the slaughterhouse. Cattle were divided into two age groups: under 36 months and over 36 months (in order to detect the age influence on the possible appearance and distribution of *Echinococcus* cysts)..

Results

The inspection included visualization, palpation and cutting, to detect the presence of hydatid cysts. During May 2019, out of the 104 slaughtered cattle, 4 (3.8%) were found to have Echinococcosis. Out of 954 inspections carried out during June 2018-April 2019, 8 (0.8%) carcasses had *Echinococcus* cyst. In total, from 1058 (954 + 104) carcasses of cattle inspected during the study period, 12 (1,.1%) carcasses harbored *Echinococcus* cysts

Bovine carcasses with *Echinococcus* cysts originated from Fier (23%), from Lushnja (25.9%), from Berat (29.8%) and from Tirana (21.1%). The carcasses that had *Echinococcus* cysts in May 2019 inspections were all from Berat (4 carcasses).



Figure 2. Echinococcus cyst caseified

Discussion

In the post mortem control and inspection performed in May 2019, the carcasses appeared non-cachectic, without edema of muscle tissue. In these instances, only the organs where cysts were found were obtained for further analysis, respectively lungs and liver. In the liver there were 130 cysts out of which 112(86%) were calcified, while in the lungs there were 123 cysts out of which 22 (17.8%) were calcified. Based on this situation were confiscated only the organs (respectively ,the lungs and liver. All bovine carcasses with *Echinococcus* cysts were above 36 months of age. In the Public Slaughterhouse of Tirana the disease was not very frequent and there were no problematic figures, however this does not mean that disease to be neglected not to be given more importance because no solve a problem.

Conclusion

Calves did not manifest Echinococcosis because they are slaughtered at a younger age and the disease fails to develop. The prevalence of Echinococcosis for May 2019 was 3.84%, while the animals slaughtered during the study period originated from Fier (23%), from Lushnja (25.9%), from Berat (29.8%) and from Tirana (21.1%). The carcasses that had *Echinococcus* cysts in May 2019 were all from Berat (4 carcasses)..

Since hydatid cyst is a risk factor for human health, it is necessary that health policy makers make effective decisions in relation to this disease and implement accurate inspections by health experts and authorities

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