

Acknowledgement

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Dedication

To my family

To my wife kaltoum Gallaba Ahmed

My lovely sons Edriss, Gammel and Nazar.

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Abstract

A cross-sectional epidemiological study was conducted to estimate the prevalence, investigate risk factors of hydatidosis in camels slaughtered at Elfashir abattoir in North Darfur and the economic impact due to hydatidosis infection. Three hundreds and eighty seven camels were investigated for hydatidosis from November 2010 to February 2011 in the study area, 241 (62.3%) from northern El Fashir and 146 (37.7%) from western El Fashir. Two hundred and thirteen camels were found to be infected with hydatid cysts giving a prevalence rate of 55%, with an infected camels 128 (60%) from Northern El Fashir and 85 (40%) from western El Fashir. One hundred and twenty three (57.7%) camels were infected in the lung, 29 (13.6%) in the liver, 5 (2.3%) in the spleen, 38 (17.8%) in both organs the lung and the liver, 14 (6.6%) in the lung and spleen, 2 (1%) in the liver and spleen and 2 (1%) in three organs the lung, liver and spleen.

Nine hundreds and sixty six hydatid cysts were encountered in examined animals. Organ distribution of hydatid cysts with single and multiple organs involved was, 460 (47.6%) were found in the lung, 53 (5.5%)

in the liver, 5 (0.5%) in the spleen, 348 (36%) in the lung and liver, 79 (8.2) in the lung and spleen, 9 (1%) in the liver and spleen and 12 (1.2%) in the lung, liver and spleen. No cysts were observed in the heart, kidney and in the mesentery.

The hydatid cyst diameter ranged from 0.5 cm to 6.4 cm, while the cyst volume ranged from 1 ml to 87 ml, so the cyst size was categorized in to three categories: less than 10 ml (small), 10 to 20 ml (medium) and more than 20 ml (large). From 966 hydatid cysts observed, 239 (24.7%) were small cysts, 462 (47.8%) medium cysts and 265 (27.4%) large cysts.

Out of nine hundreds and sixty six hydatid cysts observed, 408 (42.2%) hydatid cysts were viable, 197 (20.4%) were not viable, 157 (16.3%) were sterile and 204 (21.1%) were calcified. The classification of 966 hydatid cysts according to their fertility status shown that from, 183 (18.9%) in the liver, 100 (24.5%) were found to be viable, 28 (14.2%) not viable, 25 (15.9%) sterile and 30 (14.7%) were calcified. While from 751 (77.7%) cyst in the lung, 288 (70.6%) were viable, 162 (82.2%) were not, 129 (82.2%) were sterile and 172 (84.3%) were calcified. Also, from 32 (3.3%) in the spleen, 20 (5%) were viable, 7 (3.6%) were not, 3 (1.9%) were sterile and 2 (1%) were calcified.

The risk factors like age and other diseases were found significantly associated with hydatidosis with a p-value of 0.002 and 0.001 respectively. The rest of the potential risk factors (sex, body condition, origin and colour) investigated were not found to be significantly associated with hydatidosis.

In economic losses, the cost of condemned organs due to hydatid cyst infection in this study was 12020 SDP (4451.9 USD). The total annual economic loss incurred due to hydatidosis in camels slaughtered at North Darfur abattoir was estimated to 36060 SDP (13355.6 USD). The losses from additional production factors (decreased carcass weight and decreased milk production) were taken into account; the lowest carcass weight was 214 kilo while highest carcass weight was 357 kilo.

ملخص الأطو حة

فـى هـذه الـوراسـة تم التـقـصـى عـن مـعدـل انـتـشـار وـض الـاكـياس العـدـلـيـة فـى الـابـل المـنـوحـه فـى سـلـخـانـة الفـاشـر فـى وـلايـة شـمـال دـر فـو ر و العـوا مـل الـو اء فـى انـتـشـار الـمـوض و اءه الـا قـتـصـادى نـتـيـجـة لـلـاصـابـه بـالـمـوض و الـاعـد مـات لـلـا جـزـاء المـصـابـه بـالـمـوض اءـنـاء فـحـص اللـجـم . اءـجـى مـسـح فـى الـسـلـخـانـه لـلـكـشـف عـن الـا كـياس العـدـلـيـة عـلى 387 راساً مـن الـابـل الـذـي ذـبـحـت فـى و قـع البـحـث خـلـال الفـتـه مـن فـبـر 2010م الـى فـوايـر 2011م . كـانـت 241 (62.3%) راس مـن الـابـل مـن شـمـال الفـاشـر و 146 (37.7%) راس مـن الـابـل مـن ءوب الفـاشـر . مـائـتـيـن و ثـلـاثـه عـشـر راس مـن الـابـل المـصـابـه بـوض الـا كـياس العـدـلـيـة اظـهـوت مـعدـل إصـابـة بـالـمـوض بـلـغـت 55% ، 128 (60%) راس مـن الـابـل المـصـابـه كـانـت مـن شـمـال الفـاشـر و 85 (40%) راس مـن الـابـل المـصـابـه كـانـت مـن ءوب الفـاشـر . و جـد أن 123 (57.7%) مـن الـابـل كـانـت مـصـابـه فـى لـؤـئـه و 29 (13.6%) مـن الـابـل كـانـت مـصـابـه فـى الكـبـد و 5 (2.3%) مـن الـابـل كـانـت مـصـابـه فـى الطـحـال بـيـنـمـا 38 (17.8%) مـن الـابـل مـصـابـه فـى كـل مـن لـؤـئـه و الكـبـد و 14 (6.6%) مـن الـابـل مـصـابـه فـى لـؤـئـه و الطـحـال و 2 (1%) مـن الـابـل مـصـابـه فـى الكـبـد و الطـحـال و 2 (1%) مـن الـابـل مـصـابـه فـى ثـلـاثـه اعـضـاء لـؤـئـه ، الكـبـد و الطـحـال .

من جملة 966 أكياس عدراية المتحصلة من الابل المصابه كانت وزعه فى الاعضاء المصابه على نحو التالى: 460 (47.6%) من الأكياس العدراية كانت فى لوائه و 53 (5.5%) من الأكياس العدراية كانت فى الكبد و 5 (0.5%) من الأكياس العدراية كانت فى الطحال و 348 (36%) من الأكياس العدراية كانت فى لوائه والكبد و 79 (8.2%) من الأكياس العدراية كانت فى لوائه والطحال و 9 (1%) من الأكياس العدراية كانت فى الكبد والطحال و 12 (1.2%) من الأكياس العدراية كانت فى لوائه والكبد والطحال. ليس هنالك أكياس عدراية فى القلب والكليه والمسويقا فى هذه الواسه. قطر الأكياس كان يتراوح بين 0.5 سم الى 6.4 سم بينما حجم الكيس العدرى ما بين 1 مل الى 87 مل وقسمت الاكياس العدرايه علي حسب الحجم الي ثلاثه: حجم صغير وهو اقل من 10 مل وموسط بين 10 - 20 مل والحجم الكبير و هو اكبر من 20 مل. ومن 966 كيس عدري وجد أن 239 (24.7%) كيس صغير الحجم و 462 (47.8%) كيس موسط الحجم و 265 (27.4%) كيس كبير الحجم. و من جملة 966 كيس عدري وجد أن 408 (42.2%) كيس كانت حيه و 197 (20.4%) كيس كانت غير حيه و 157 (16.3%) كيس كانت عقيمه و 204 (21.1%) كيس كانت متكلسه. تم تصنيف 966 كيس عدري بناءً على مستوى الخصوبه والعضو المصاب على نحو التالى: من بين 183 (18.9%) كيس وجدت فى الكبد، 100 (24.5%) من الأكياس كانت حيه و 28 (14.2%) من الأكياس كانت غير حيه و 25 (15.9%) من الأكياس كانت عقيمه و 30 (14.7%) من الأكياس كانت متكلسه.

بينما 751 (77.7%) كيس كانت فى لوائه، 288 (70.6%) من الأكياس كانت حيه و 162 (82.2%) من الأكياس كانت غير حيه و 129 (82.2%) من الأكياس كانت عقيمه و 172 (84.3%) من الأكياس كانت متكلسه. ايضاً 32 (3.3%) كيس كانت فى الطحال 20 (5%) من الأكياس كانت حيه و 7 (3.6%) من الأكياس كانت غير حيه و 3 (1.9%) من الأكياس كانت عقيمه و 2 (1%) من الأكياس كانت متكلسه.

العوامل المؤثره فى انتشار مرض الاكياس العدرايه العمر والامراض الاخرى كانت لهم علاقه معويه بانتشار المرضو كانت قيمه p 0.002 و 0.001 بالتوالي. وبقية العوامل (الجنس، الصحه الجسميه، الاصل و اللون) الداخله فى هذه الواسه كانت ليس لديهم علاقه معويه بانتشار مرض الاكياس العدرايه فى الجمال.

الخصلة الاقتصادية الناتجة من الإعدامات الأعضاء المصابة بوض الأكياس العذرية في
الجمال، في فترة الولاية كانت 12020 جنيه بو داني (4451.9 دولار أويكي) و الخصلة
الاقتصادية السوية الناتجة من الوض بلغت 36060 جنيه بو داني (13355.6 دولار أويكي).
الفقد الاقتصادي لبعض عوامل الإنتاج مثل للزن وإنتاج اللبن كانت في الإعتبارو كان اقلوزن
للحوانات المنووحه في سلخانة الفاشر 214 كيلو و أعلىوزن للحوانات المنووحه 357 كيلو في
فترة هذه الولاية.