Final Degree Project - Faculty of Veterinary

RETROSPECTIVE STUDY OF HEPATOPATHIES IN HORSES HOSPITALIZED AT UE-HCV

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1. INTRODUCTION

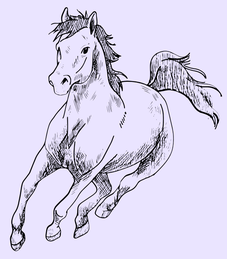
The liver is the body's largest gland with **crucial functions** for health: filtering toxins, aiding digestion, metabolising nutrients, producing proteins...

In **horses**, **liver diseases** are often **reversible** and the organ can **regenerate**.

Significant **damage** (**~70%**) must occur before signs of liver failure become **noticeable**.

Hepatopathies:

- **Primary** (liver = main target)
- **Secondary** (liver = consequence)



Retrospective study (2011-2025)

2. OBJECTIVES

Primary vs. Secondary [1]

- Biopsy "score"
- Biopsy features
- Clinical signs

Hepatocellular damage vs. Canalicular lesion vs. Lipidosis [2]

- Blood tests
  - Complete blood count
  - Biochemistry

[1] 17 equines: Prim. (7) vs Sec. (10)
[2] 16 equines: H (8) vs. C (5) vs. L (3)

3. MATERIALS & METHODS

Statistical analysis (R commander (4.3.0) + Excel)

- Descriptive
- Categorical: Fisher's exact test
- Numerical: Shapiro-Wilk; Levene; Mann-Whitney U test; Kruskal-Wallis test

Significance: **p value < 0.05** / Tendencies: **p value ⩽ 0.15**

Q-vet + UE-HCV reports

4. RESULTS & DISCUSSION

Primary
Bile duct damage (**GGT**)
Severe histological changes (**score**)
Worst BS/More weight loss
Fibrosis + Inflammatory infiltration

Secondary
Systemic alteration (**lactate**)

Canalicular lesion
Dyspnea/Tachypnea

Lipidosis
Major inflammation (**lymphocytes**)
Dyspnea/Tachypnea

Hepatocellular damage
Severe histological changes (**score**)
Depression

Table 1. Clinical signs: Primary vs. Secondary hepatopathy

Variable	Level	Primary (N, %)	Secondary (N, %)	P-value (Fisher's)
Weight loss Low Body Score	No	3 (42.9%)	9 (90.0%)	0.10
	Yes	4 (57.1%)	1 (10.0%)	

Table 2. Blood test + Durham Score: Primary vs. Secondary hepatopathy

Variable	Unit	Primary (N, Median [IQR])	Secondary (N, Median [IQR])	P-value (Mann-Whitney U)
GGT	U/L	N=7, 56.0 [48.3]	N=8, 15.4 [60.6]	0.07
Lactate	mmol/L	N=5, 2.8 [1.7]	N=8, 4.2 [3.6]	0.08
Durham Score	Score	N=7, 2.0 [2.5]	N=10, 0.0 [0.8]	0.08

Table 3. Clinical signs: Canalicular vs. Hepatocellular vs. Lipidosis group

Variable	Level	C (N, %)	H (N, %)	L (N, %)	P-value (Fisher's)
Depression	No	5 (100.0%)	4 (50.0%)	2 (66.7%)	0.14
	Yes	0 (0.0%)	4 (50.0%)	1 (33.3%)	
Dyspnea Tachypnea	No	2 (40.0%)	7 (87.5%)	1 (33.3%)	0.15
	Yes	3 (60.0%)	1 (12.5%)	2 (66.7%)	

Table 4. Blood test + Durham Score: Canalicular vs. Hepatocellular vs. Lipidosis group

Variable	Unit	C (N, Median [IQR])	H (N, Median [IQR])	L (N, Median [IQR])	P-value (Kruskal-Wallis)
Lymphocytes	cells/µL	4, 1825.0 [396.2]	7, 1060.0 [767.0]	2, 2910.0 [130.0]	0.12
Durham Score	Score	5, 0.0 [1.0]	8, 2.0 [2.3]	3, 0.0 [0.0]	0.13

Table 5. Biopsy features: Primary vs. Secondary hepatopathy

Grade Variable	Level	Primary (N, %)	Secondary (N, %)	P-value (Fisher's)
Fibrosis	Absent	5 (71.4%)	9 (90.0%)	0.15
	Mild	0 (0.0%)	1 (10.0%)	
	Moderate	2 (28.6%)	0 (0.0%)	
Inflammatory Infiltration	Absent	1 (14.3%)	3 (30.0%)	0.17
	Mild	2 (28.6%)	6 (60.0%)	
	Moderate	4 (57.1%)	1 (10.0%)	

Table 6. Biopsy features: Canalicular vs. Hepatocellular vs. Lipidosis group

Grade Variable	Level	C (N, %)	H (N, %)	L (N, %)	P-value (Fisher's)
Lipidosis	Absent	1 (20.0%)	5 (62.5%)	0 (0.0%)	0.23
	Mild	3 (60.0%)	3 (37.5%)	2 (66.7%)	
	Moderate	1 (20.0%)	0 (0.0%)	1 (33.3%)	
Inflammatory Infiltration	Absent	2 (40.0%)	1 (12.5%)	0 (0.0%)	0.41
	Mild	1 (20.0%)	4 (50.0%)	3 (100.0%)	
	Moderate	2 (40.0%)	3 (37.5%)	0 (0.0%)	

Limitations

- Subjectivity in classification
- Population heterogeneity
- Retrospective design
- Small sample size
- Single biopsy site

5. CONCLUSIONS

Primary group: **Severe and specific damage**
Secondary group: **Systemic compromise**
Lipidosis group: **Inflammatory process**
Hepatocellular group: **Severe histopathological lesions**

Bibliography