

Objective

The main goal of this paper is to write a bibliographic synthesis about most of the recent published information about feline cholangitis

Introduction

Cholangitis in cats is an ill-defined inflammatory disorder of the hepatobiliary tree and one of the most common hepatic disorders in cats. According to WSAVA Liver Diseases and Pathology Standardisation Research Group, cholangitis can be subcategorized in 3 main forms based on the predominate type of inflammatory cell infiltrates: Neutrophilic cholangitis (NC) -acute (ANC) and chronic (CNC)-, Lymphocytic cholangitis (LC) and Liver fluke associated cholangitis.

The term “cholangitis” is used in preference to “cholangiohepatitis” as Inflammatory disruption of the limiting plate to involve hepatic parenchyma is not a consistent feature and if present, is usually an extension of primary cholangitis.

Triaditis

- 45-80% of patients with CN or CL have a concomitant disease, mainly pancreatic or intestinal.
- Cholangitis has been suggested as a predisposing factor.
- Its etiology is not well defined and is considered different for each patient.
- Other diseases associated with cholangitis are nephritis and skin fragility syndrome.

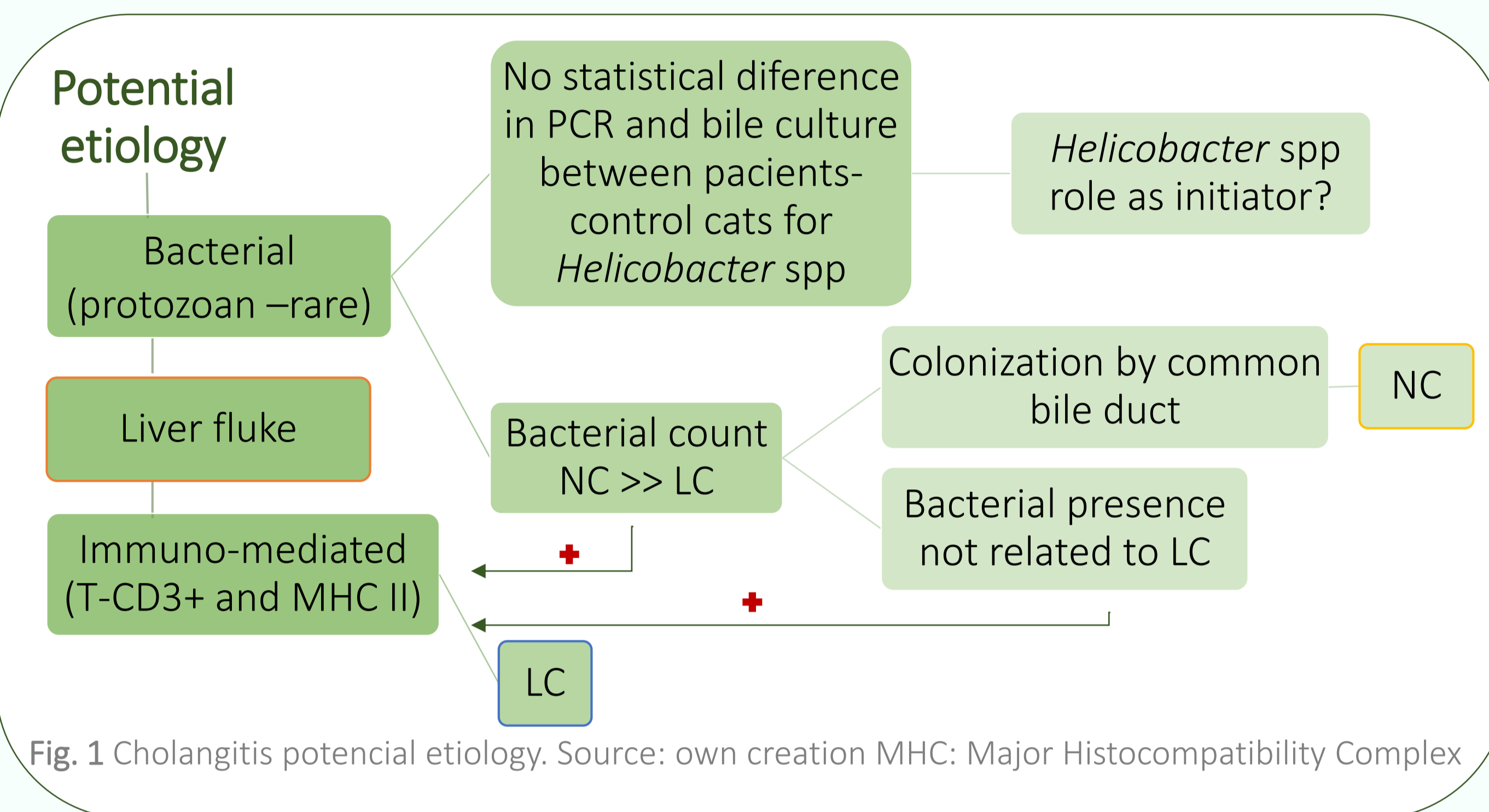
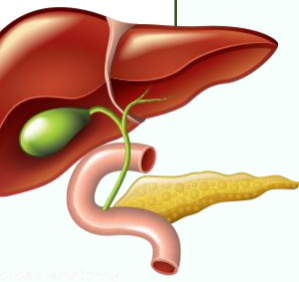


Fig. 1 Cholangitis potencial etiology. Source: own creation MHC: Major Histocompatibility Complex

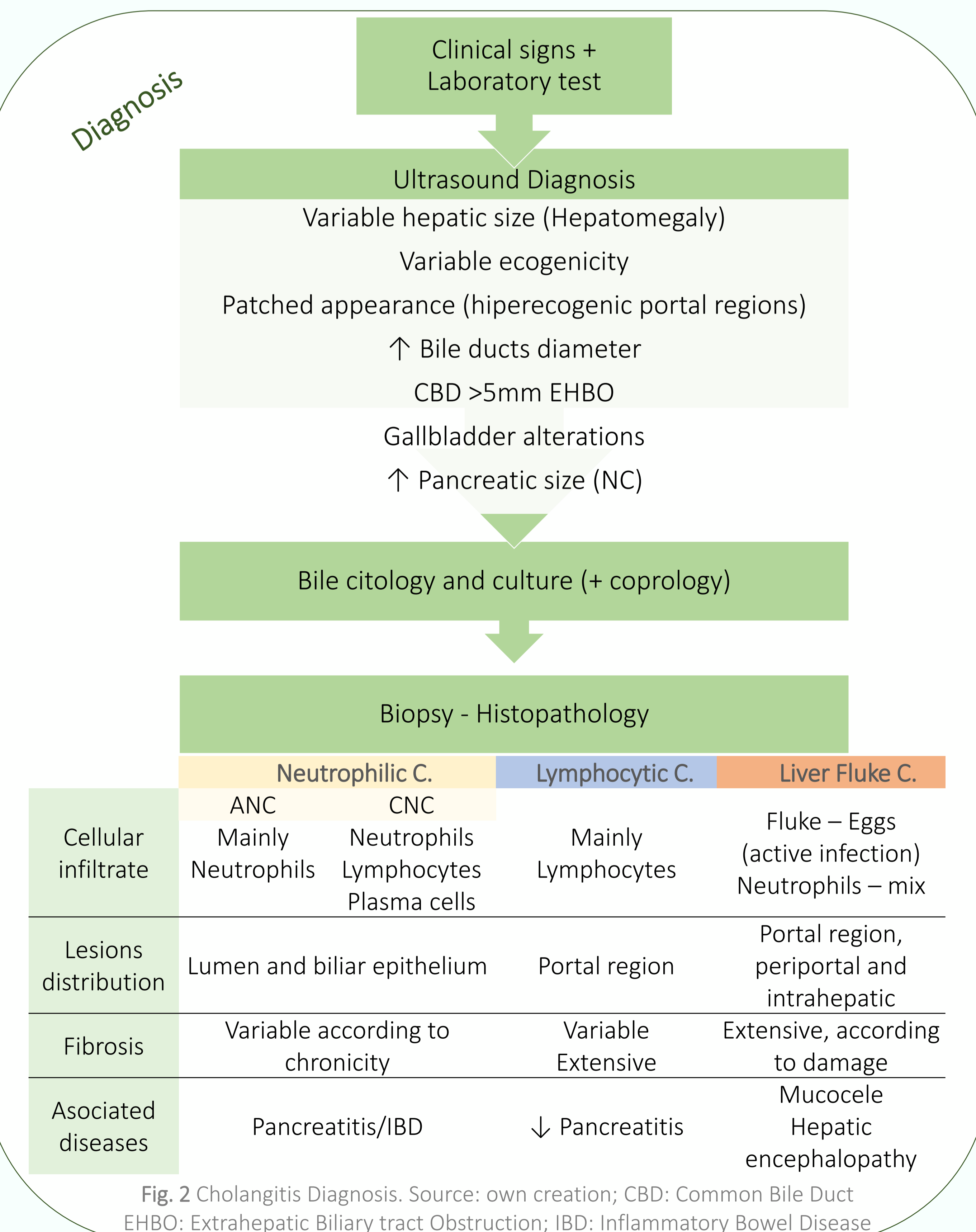


Fig. 2 Cholangitis Diagnosis. Source: own creation; CBD: Common Bile Duct EHBO: Extrahepatic Biliary tract Obstruction; IBD: Inflammatory Bowel Disease

| | NEUTROPHILIC C. Acute and Chronic | LYMPHOCYTIC C. | LIVER FLUKE C. |
|---|--|--|---|
| Predisposition | Middle-old age? | Young? Persian Norwegian forest Male? | DSH Female |
| Main clinical features | Lethargy Fever (sustained ANC, intermittent CNC) +/- Anorexia | Asymptomatic Bright (Nausea and Vomiting in later stages) Progressive Variable Progressive (EHBO) Progressive (EHBO) Transparent-yellowish ↑protein-globulin ↓↓Nucleated cells | Asymptomatic (↑↑ parasitism: Vomiting and Diarrhoea) Progressive Anorexia |
| Weight loss Appetite | +/- Anorexia | Progressive (EHBO) Progressive (EHBO) | Progressive Anorexia |
| Jaundice | + | + | + |
| Peritoneal Effusion (ascites) | - | Transparent-yellowish ↑protein-globulin ↓↓Nucleated cells | - |
| Abdominal lymphadenopathy | - | + | - |
| Hepatomegaly | - | Palpable +/- Palpable | Progressive |
| Concurrent disease (Pancreatitis, IBD, CRD) | Vomiting Ptyalism Diarrhoea Polydipsia | | |
| Hepatic encephalopathy | - | Later stages | ++ |
| Neutrophilia | + | Slight | - |
| Lymphopenia | Left shifted | + | - |
| Anaemia | + | Mild | - |
| Other Alterations | No regenerative (CRD) | Poikilocytosis Coagulopathies | |
| Laboratory values | ↑ALT ↑AST GGT ↑ALP ↑Bilirubin ↑Bile acids ↑Globulins ↓Cobalamin | ↓S ↑CNC +/- + + + + | + + + + + + |
| Diagnosis | Ultrasound Bile citology + culture Histopathology Coprology | ✓ ✓ ✓ | ✓ ✓ ✓ 8-12 weeks post-infection |

Fig. 3 Cholangitis main clinical features, laboratory values and diagnosis techniques. Source: own creation; CRD: Chronic Renal Disease; S: Sensitivity; DSH: Domestic Short-Hair

| | Treatment | |
|-----|--|---|
| | Neutrophilic C. | Lymphocytic C. |
| | Antibiotic CNA and CNC (1-2 months) Cephalosporin Amoxicillin Amoxicillin + Clavulanate Ciprofloxacin Aminoglycoside Vancomycin (Multiresistant <i>Enterococcus Faecium</i>) | Corticosteroids (Immunosuppressive dose lifelong treatment) Cyclosporine Chlorambucil Methotrexate Cyclophosphamide |
| ANC | Corticosteroids | Liver fluke |
| CNC | Anti-inflammatory dose for short time periods Use simultaneously with antibiotics | Praziquantel and nitroscanate |
| | Support therapy | |
| | Colchicine – UDCA – SAM Nasoesophageal tube - Hiperproteic diet | |

Fig. 4 Cholangitis treatment. Source: own creation; UDCA: Ursodeoxycholic acid; SAM: S-Adenosyl-Methionine

Prognosis

- Cholangitis is not a frequent cause of death in cats and its mortality is associated with concomitant diseases.
- Good prognosis in NC and LC. Survival times in treated cats are approximately 1 year for CN and >8 years for CL.
- Guarded to poor prognosis in Liver fluke associated cholangitis.
- Treatment with prednisone increases life expectancy.

Conclusions

- WSAVA's working group classification has been fundamental to the comprehension of the retrospective published studies and to establishing prospective studies.
- The etiology is uncertain, so the involvement of bacterial etiological agents is still controversial.
- The pathogenicity of *Helicobacter* spp remains questionable
- The diagnostic protocol is already well defined.
- The treatment protocol seems to yield good results but is susceptible to improvement.