**Balantidium coli**

- Geographical Distribution: Tropical zones but is present throughout temperate climate as well.
- Epidemiology & effects: similar to those of E. histolytica.
- DH: Humans, pigs, guinea pigs, rats and other mammals.
- IH: None

**Mode of transmission**
- Feco-oral (cysts that found in stools are ingested).
- Disease - balantidiasis

**Pathogenesis**
- Zo foci - liver & lung.
- *foci* - a localized area of disease or the chief site of a generalized disease or infection.
- Urogenital organs sometimes are attacked.

**Treatment & Control**
- Drugs used: Carbarsone, Diodohydroxyquin & Tetracycline
- Prevention & control
- Measures are similar to those for E. histolytica, except particular care by those who work with pigs.

**Ichthyophthirius multifiliis**
- *I. multifiliis* is very large, and the cysts on infected fish are visible.
- Disease known as ick (white spot disease) where the parasites attack epidermis, cornea, and gill filaments.

**Pathogenesis**
- Grayish pustules (small bumps on the skin that fill with fluid or pus) from the colonized skin.
- Host’s action:
  - Mucus production by epidermal cells.
  - Fish may die due to gas exchange interruption when the parasites attack the gill.
- Some different fish species that recover show protective immunity suggesting possible development of vaccines. e.g. in catfish.

**Treatment**
- For aquarium fish:
  - Dilute concentration of formaldehyde, malachite green, or methylene blue.
  - Food with malachite green developed to control ick.

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**Myxobolus cerebralis**
- Parasites of salmonids (salmon & trout).
- Causes Whirling disease in farmed salmon and trout and also in wild fish population.
- Afflicts juvenile fish (fingerlings and fry) and causes skeletal deformation and neurological damage.
- M. cerebralis feeds on the fish’s cartilage, and the infection can cause skeletal deformities, a blackened tail, and whirling behavior.
- Fish "whirl" forward in an awkward corkscrew-like pattern instead of swimming normally, find feeding difficult, and are more vulnerable to predators.

**Encephalitozoon cuniculi**
- Among the most extensively studied of all Microsporida.
- Occurring in laboratory mice, rabbits, monkeys and human too.
- It was thought to cause rabies & polio previously.
- May be transmitted by body exudates (any fluid that filters from the circulatory systems into lesions or areas of inflammation) or transplacentally.
- Damage is usually minimal but it can be fatal in AIDS patients.