Giardiasis in France

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Human giardiasis

There are very few data on human giardiasis in France. A study on 81 patients with AIDS (Cotte et al., 1993) revealed that 70.6% of them had diarrhea or malabsorption. The prevalence of Giardia duodenalis in AIDS patient with diarrhea or malabsorption was 5.8%. A study determining the prevalence of intestinal parasitosis between 1997 and 1999 in the microbiology laboratory of the Fort de France University Hospital (Martinique), showed giardiasis in less than 1% of the population affected (Edouard et al., 2004). An article published in 1990 by Moulinier et al., stated that a marked decreased in the prevalence of Giardia spp. has been observed from 1970 to 1990, due to a sustained improvement in public hygiene. They also stated that an evolution in childhood behaviour at school, outdoors, and at home, accounted for a decrease in intestinal parasites. No other more recent paper has been published since then.

Animal giardiasis

A survey carried out in 1998/1999 on domestic carnivors (Beugnet et al., 2000) showed that 14.7% of cats are infected by intestinal protozoans, Giardia duodenalis being more frequent than Isospora sp. 30.4% of under 6 month dogs are infected by Giardia duodenalis. 7.1% of adults dogs are infected by Giardia duodenalis.

A study conducted from January to April 2003 in 10 farms breeding goats (Castro-Hermida et al., 2005) revealed that the prevalence of Giardia duodenalis cysts was between 12 and 14%. 68.9% of dairy calves and 91.8% of veal calves were detected positive to Giardia duodenalis in herds in Pays de la Loire area (Trullard, 2002). Another study in beef calves and their dams in Auvergne in 2004 (Huvelin, 2004) revealed a prevalence of 78.8% and 32.6% respectively. Assemblage A was indentified here, suggesting a zoonotic risk.

Occurrence of Giardia in the environment

A waterborne microbial risk assessment survey was carried out bewteen October 1998 and June 1999 in southeast France (Zmiro-Navier et al., 2006). 4 public water systems were chosen: one
« pristine » groundwater located in a quarstic environment, a quarstic watershed, an unprotected watershed exposed to livestock and community sewage, one surface water (lake surrounded by human activities). 36 water samples were analysed, 22.2% were positive for *Giardia duodenalis*. A study in 6 swimming pools in Paris (Hartemann) was carried out during a year. A very low prevalence in *Giardia* was found, indicating that treatment and desinfection procedures are efficient.

A survey was conducted to evaluate the removal efficiency for *Giardia sp* cysts of a number of wastewater treatment plants in southern France (Wiandt *et al.*, 2000). Cysts were detected in raw wastewater at all 11 treatment plants in concentrations ranging from 130 to 41270 cysts/litre. The removal of cysts by sewage treatment was found to range between 99.5 and 99.8% for activated sludge, 99.9 and 100% for waste stabilisation ponds, and for the trickling filter plants up to 98.3%. Despite the high removal efficiencies recorded in this study, the range of cysts detected in final effluents discharged into controlled waters ranged from <1 to 66 cysts/litre. This is undoubtedly an underestimate of actual occurrence and concentration in wastewater, given the limitations of the methods currently employed by investigators. Cysts were detected in final effluents which had been disinfected by both UV and chlorination (range 0.3-19 cysts/litre), however it is not known whether such cysts are viable or not.

**Waterborne and foodborne outbreaks**

There are no records of waterborne or foodborne outbreaks.

**Specific regulations**

Giardiasis is not a notifiable disease in France.

**Bibliography**


Hartemann. Université de Nancy, membre du Conseil scientifique du programme de recherche Environnement et santé. Document Eau et Santé

