

Q Fever, Austria 2009



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In Austria, *C. burnetii* infections in humans and in animals are not notifiable diseases. We performed a survey to assess the prevalence of human Q fever in Austria in 2009. In January 2010, a questionnaire was sent to nine laboratories in nine Austrian provinces, requesting anonymized data on Q fever tests performed in 2009. In parallel, all Austrian Departments of Infectious Disease were asked to report clinical cases of Q fever diagnosed in 2009. In total, 5361 initial sera were tested, 166 yielding antibody titers' specific for *C. burnetii* (3.1%). Three patients showed signs and symptoms compatible with Q fever, two of them with connections to highly likely animal reservoirs. No outbreak was documented in 2009. Our survey confirms that infection by *C. burnetii* is endemic in Austria. Occurrence of Q fever always should prompt investigations for a source of infection (contact with cattle, sheep, goats or parturient cats; consumption of raw milk). Although cases of miscarriage among cattle had reportedly occurred at the farm of one patient in the weeks before her hospitalization for Q-fever in Vorarlberg in 2009, To our knowledge no attempt was made to verify the presence of *C. burnetii* in this herd. Also in the case of the female patient from Tirol, to the best of our knowledge no attempt was made to identify *C. burnetii* in her sheep herd.

In Austria, the first case of Q fever was documented in 1948 in Carinthia; in his publication, Hintermann described five sporadic cases [1]. The disease was also reported from the province Tirol by Lass, who in 1952 described 360 self-observed cases [2]. While the validity of his diagnoses can be questioned, a WHO survey conducted in 1951 revealed 4 out of 9 positive sera from Tirol to be correct positive [3].

Our survey confirms that infection by *C. burnetii* is endemic in Austria. Approximately 0.6 to 6% of the Austrian population are considered seropositive for antibodies against *C. burnetii* [4,5,6,7] This complies well with the results of our finding, yielding seroprevalences of 3.1% and 6.4% among the serum samples tested in 2009.

An estimated 2,300 people contracted Q fever in the Netherlands in 2009, up from 1,000 in 2008 and 168 in 2007. Still in 1955 the Netherlands were considered to be free from Q fever. One theory as to why the outbreak has been so severe in the Netherlands is the large number of animals per farm (especially on large dairy goat farms), combined with the density of the Dutch human population, which is one of the highest in the world. In all there are around 1.2 million sheep and 400,000 goats on 350 farms in the Netherlands, a country of 16 million people.

In Austria (total population 8.3 Mio. inhabitants) there were (per 1.4.2008) 389,379 sheep on 15,276 farms and 77,655 goats on 10,278 farms. This significant difference - seven goats per Austrian farm versus 1142 goats per Dutch farm - may explain the absence of the "new Q fever problem" in Austria.

In 2010, a total of 274 cases (of which 4 deaths) have been reported in the Netherlands. Out of these cases 160 had disease onset dates in 2010. Others had disease onset dates between 2007-2009 or the date of onset was unknown. Preventative culling in affected farms was initiated on 21 Dec. 2009. Screening of blood donors in those highly endemic areas has been implemented on 15 March 2010.

Table: Summarized data on serological testing for human Q fever, Austria 2009
[* = testing performed at the "Institut für Hygiene und angewandte Immunologie" MUV]

Austrian province:	Number of sera tested:	Number of sera yielding antibody titers specific for <i>C. burnetii</i>	Clinical cases:	Lethal outcome
Vorarlberg	10*	1	#female 29 a: "acute febrile illness", 1 week hospitalization	0
Tirol	950	38	#male 38 a: "fatigue" #female 25 a: "persistent subfebrile illness, fatigue"	0
Salzburg	25	0	-	-
Oberösterreich	67*	2	-	-
Niederösterreich	361*	25	-	-
Kärnten	1	0	-	-
Steiermark	2855	32	-	-
Wien	1092*	68	-	-
Burgenland	0	-	-	-
Total:	5361	166	3	0

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