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Spiral Wallis

The Val de Bagnes *Coxiella* outbreak


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Coxiella burnetii

- Obligate intracellular bacteria
- Size 0.2-0.7 μ - endospores <0.1 μ
- Bacteria resistant in the environment (dryness, temperature, chemicals)
- Phase variation (phase 1 – 2)




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Coxiella burnetii

- All mammals and birds are susceptible,
- *C. burnetii* lead to abortion in domestic animals or stillborne
- Tremendous amount of bacteria in biological liquids and abortion material
- Transmission via aerosols



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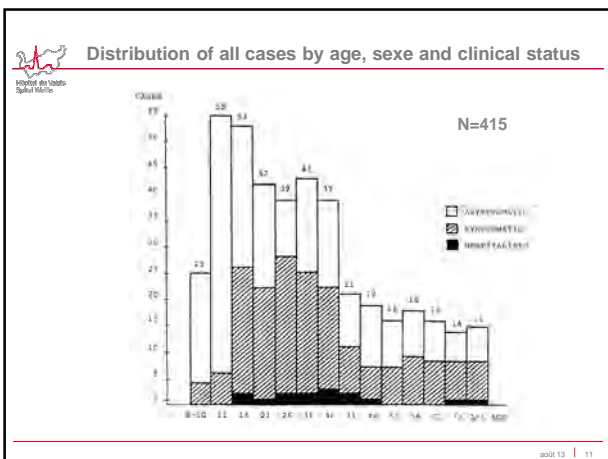
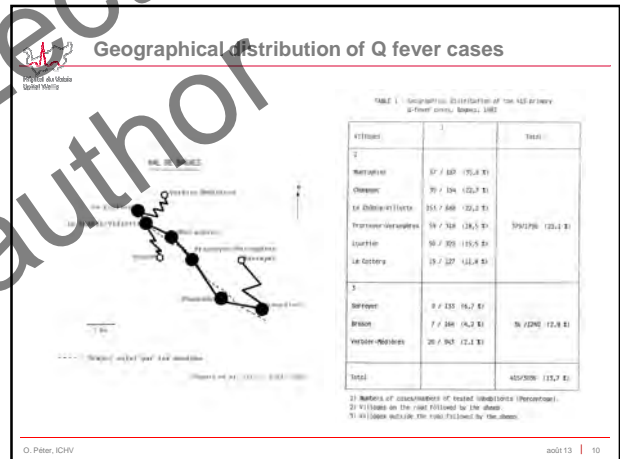
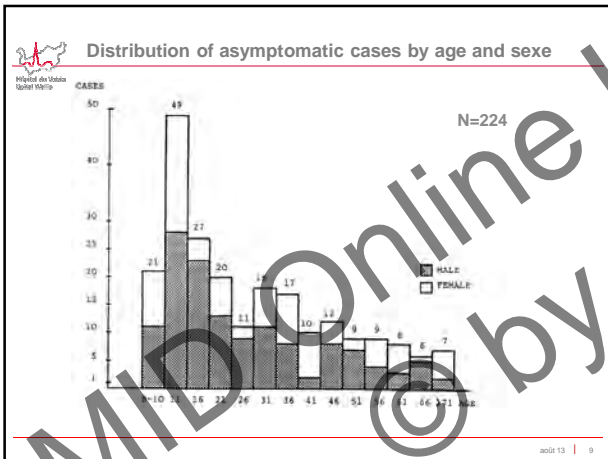
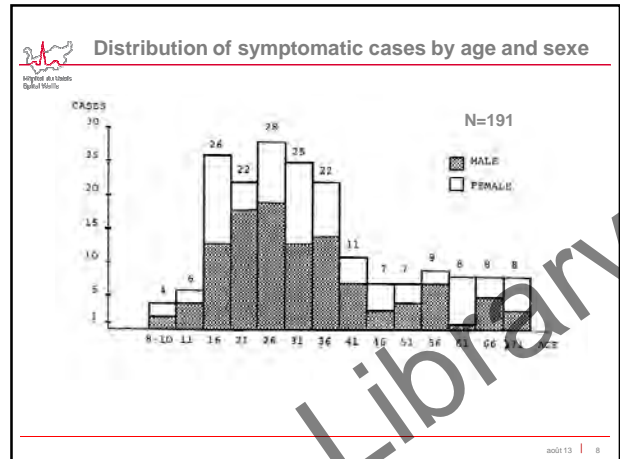
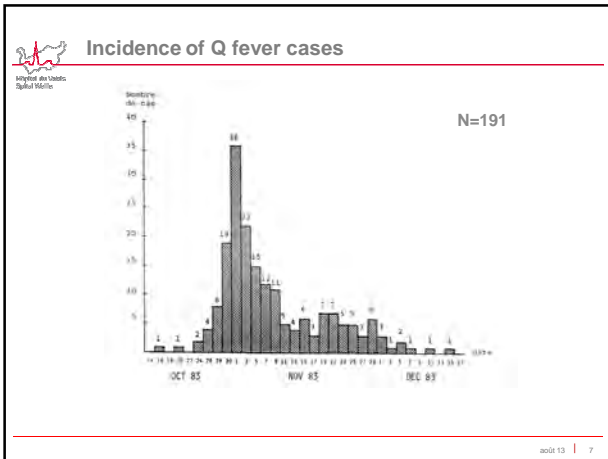
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- ### Acute Q fever
- Symptoms observed among patients (N=191) :
- 1. Asthenia 97%
 - 2. Fever >38.5 88%
 - 3. Headache 77%
 - 4. Cough 70%
 - 5. Myalgia 64%
 - 6. Weight loss 43%
 - 7. Nausea 25%
 - 8. Rash 5%
- Source: Institut für Infektionskrankheiten, Robert Koch-Institut
- 4 Oct 13 | 1

 **Q fever outbreaks**


- Assessing the long-term health impact of Q-fever in the Netherlands; a prospective cohort study started in 2007 on the largest documented Q-fever outbreak to date. van Loenhout JA, Paget WJ, Vercoleyen JH, Wijkmans CJ, Hautvast JL, van der Velden K. *BMC Infect Dis.* 2012 Oct 30;12:280. N=4000
- Q fever outbreak in the village of Noca, Srem County, Vojvodina Province, Serbia, January to February 2012. Medić S, Kalusi DN, Seguljev Z, Obrenović J, Rudan P, Lazarević M, Kočić JJ, Sajenković D, Pusić I, Bugarski D, Vidanović D, Sekler M. *Euro Surveill.* 2012 Apr 12;17(15). N=43
- Outbreak of Q fever, Florac, Southern France, Spring 2007. King LA, Goirand L, Tissot-Dupont H, Giunta B, Giraud C, Colardelle C, Duquesne V, Rousset E, Aubert M, Thiéry R, Calatayud L, Daurat G, Hocqueloux L, Cicchero V, Golliot F, de Valk H. *Vector Borne Zoonotic Dis.* 2011 Apr;11(4):341-7. N=18
- Q fever outbreak in a small village, Taiwan. Hung MN, Chou YF, Chen MJ, Hou MY, Lin PS, Lin CC, Lin LJ. *Jpn J Infect Dis.* 2010 May;63(3):212-3. N=7
- A large Q fever outbreak in an urban school in central Israel. Amital Z, Bromberg M, Bernstein M, Raveh D, Keysary A, David O, Pitlik S, Swerdlow D, Massung R, Rztokiewicz S, Halutz O, Shohat T. *Clin Infect Dis.* 2010 Jun 1;50(11):1433-8. N=144
- Q fever outbreak in Cheltenham, United Kingdom, in 2007 and the use of dispersion modelling to investigate the possibility of airborne spread. Wallenstein A, Moore P, Webster H, Johnson C, van der Burgt G, Pritchard G, Elle-Iversen J, Oliver I. *Euro Surveill.* 2010 Mar 25;15(12). N=30
- Investigation of a Q fever outbreak in a Scottish co-located slaughterhouse and cutting plant. Wilson LE, Cooper S, Prempeh H, Young D, Pollock KG, Stewart WC, Browning LM, Donaghy M. *Zoonoses Public Health.* 2010 Dec;57(7-8):453-8. N=75

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 **Q fever outbreaks**


- An outbreak of Q fever in Bulgaria. Panaiotov S, Ciccozzi M, Brankova N, Leverova V, Mitova-Tiholova M, Amicosante M, Rezza G, Kantardjiev T. *Ann Ist Super Sanita.* 2009;45(1):83-6. N=220
- Outbreak of Q fever among US military in western Iraq, June-July 2005. Faix DJ, Harrison DJ, Riddle MS, Vaughn AF, Yingsit SL, Earhart K, Thibault G. *Clin Infect Dis.* 2008 Apr 1;46(7):e65-8. N=22
- Outbreak of Query fever among Argentinian special police unit officers during a United Nations mission in Prizren, South Kosovo. Faas A, Engeler A, Zimmermann A, Zöller L. *Mil Med.* 2007 Oct;172(10):1103-6. N=42
- Outbreak of Q fever associated with a horse-boarding ranch, Colorado, 2005. Bamberg WM, Pape WJ, Beebe JL, Nevil-Woods C, Ray W, Maguire H, Nucci J, Massung RF, Gershman K. *Vector Borne Zoonotic Dis.* 2007 Fall;7(3):394-402. N=31
- Large Q fever outbreak due to sheep farming near residential areas, Germany, 2005. Gilsdorf A, Kron C, Grimm S, Jensen E, Wagner-Wiening C, Alpers K. *Epidemiol Infect.* 2008 Aug;136(8):1034-7. N=331
- Outbreak of Q fever among a group of high school students in Slovenia, March-April 2007. Grah E, Socar M, Koren N, Ucakar V, Avsic T, Pogacnik M, Kraigher A. *Euro Surveill.* 2007 Jun 13;12(7):E070719. N=35
- Q fever outbreak at a cosmetics supply factory. Wade AJ, Cheng AC, Altan E, Molloy JL, Harris OC, Stenos J, Hughes AJ. *Clin Infect Dis.* 2006 Apr 1;42(7):e50-2. N=4
- Poker players' pneumonia. An urban outbreak of Q fever following exposure via a parrot/cat. Langley JM, Marrie TJ, Covert A, Waag DM, Williams JC. *N Engl J Med.* 1988 Aug 11;319(6):354-6. N=12

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 **CONCLUSION**

- C. burnetii* is frequently the source of outbreaks around the world. Most of the outbreaks are undetected as symptoms are usually mild and non specific.
- When we diagnose 1 case of Q fever, we should look for additional cases in the area.
- Sheep and goats are the most important sources of infections to human.
- Serology, immunofluorescence in particular, is the method used to establish the diagnostic of acute and chronic Q fever infection

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