macrolides as monotherapy for brucellosis, these compounds can be reserved as adjunctive agents. The recent WHO report states that better results are achieved when RIF is combined with DOX [3].

Combinations of quinolones and macrolides, which show good intracellular diffusion and act synergistically in vitro against *B. melitensis*, must be investigated in animal models before clinical trials are undertaken.

*Neşe Evrensel and Bülent Sümerkan*
Department of Microbiology,
University of Erciyes,
Kayseri, Turkey 38039

## References

1. Trujillo IZ, Zavala AN, Caceres JG, Miranda CQ. Brucellosis. Infect Dis Clin North Am 1994; 8: 225–41.
2. Hall WH. Modern chemotherapy for brucellosis in humans. Rev Infect Dis 1990; 12: 1060–99.
3. Food and Agricultural Organization–World Health Organization. FAO–WHO Expert Committee on Brucellosis, 6th report. WHO Tech Rep Ser 1986; 740: 56–7.
4. Bosch J, Lopez de Goicoechea MJ, Ariza J, Cisnal MC, Martin R. In vitro activity of ciprofloxacin, ceftriaxone and five other antimicrobial agents against 95 strains of *Brucella melitensis*. J Antimicrob Chemother 1986; 17: 459–61.
5. Pechere JC. Quinolones in intracellular infections. Drugs 1993; 45(suppl 3): 29–36.
6. National Committee for Clinical Laboratory Standards. Methods for dilution antimicrobial susceptibility tests for bacteria that grow aerobically, 3rd Edn. Approved Standard M7–A3. Villanova, PA: NCCLS, 1993.
7. Eliopoulos GM, Moellering RC. Antimicrobial combinations. In Lorian V. Antibiotics in laboratory medicine. Baltimore: Williams and Wilkins, 1991: 432–92.
8. Hindler J. Synergism testing: Broth microdilution checkerboard and broth macrodilution methods. In Isenberg HD. Clinical microbiology procedures handbook. Washington DC: American Society for Microbiology, 1992: 5.18.1–5.18.28.
9. Rubinstein E, Lang R, Shasha B, et al. In vitro susceptibility of *Brucella melitensis* to antibiotics. Antimicrob Agents Chemother 1991; 35: 1925–7.
10. McDonald PJ, Pruul H. Phagocyte uptake and transport of azithromycin. Eur J Microbiol Infect Dis 1991; 10: 828–33.
11. Doğanay M, Aygen B. Use of ciprofloxacin in the treatment of brucellosis. Eur J Clin Microbiol Infect Dis 1992; 11: 75–6.
12. Badawi Al-Sibai M, Halim MA, El-Shaker MM, Khan BA, Hussain Qadri SM. Efficacy of ciprofloxacin for treatment of *Brucella melitensis* infections. Antimicrob Agents Chemother 1992; 36: 150–2.
13. Akova M, Gür D, Akalın HE, Kocagöz T, Livermore DM. In vitro activities of antibiotics and combinations against *Brucella melitensis* at different pH levels [abstract 523]. In: Abstracts of the 7th European Congress of Clinical Microbiology and Infections Diseases, Vienna, March, 1995: 100.

## Imported trichinellosis from former Yugoslavia

*Clin Microbiol Infect* 1997; 3: 506–507

Human trichinellosis is a worldwide anthropozoonosis, caused by the nematode *Trichinella spiralis*, and it usually results from the ingestion of infested raw or undercooked meat from pigs, wild boars, bears, horses or other mammals [1]. In western Europe, transmission by horses has greatly increased over the past twenty years, with six French outbreaks since 1977, involving more than 1750 people, being attributed to horsemeat consumption [2]. Although trichinellosis is relatively uncommon in Western countries, it may be acquired during travel in developing countries where it is endemic. Recently, a small outbreak of trichinellosis caused by smoked ham imported from the former Yugoslavia was reported [3]. We describe a case of trichinellosis occurring in a French traveler who ate smoked pork in Serbia.

A previously healthy 25-year-old French man was admitted on 6 February 1996 with a 10-day history of watery diarrhea, fever, diffuse myalgia, nocturnal pruritus and facial edema. The patient had recently returned from a 1-month trip to Cacak (Serbia), where he had eaten smoked pork between 7 and 10 January 1996. Four family members who also ate the meat were hospitalized with the same symptoms. At admission, the patient was febrile (38.4 °C) and experienced intense myalgia, diarrhea and periorbital edema compatible with trichinellosis; neurologic examination was normal and there was no sign of vasculitis; the white blood cell count was $13.5 \times 10^9$/L with 47% eosinophils; the serum creatine phosphokinase was 1448 U/L (normal range, 21–232 U/L); the alanine aminotransferase, aspartate aminotransferase and serum aldolase were, respectively, 2, 1.5 and 8 times normal values; the electrocardiogram was normal; stool analysis for parasites was negative. *Trichinella* serology was positive by immunofluorescence assay at a titer of 1/400 before and after 5 days of treatment. The patient responded well to a 10-day treatment with prednisone 0.5 mg/kg and albendazole 1600 mg daily. There were no abnormal clinical signs at follow-up on day 30.

Since 1983, numerous outbreaks of human trichinellosis have been reported in the former Yugoslavia, affecting more than 2000 patients [4]. The increased number of cases may be attributable to the lack of, or insufficient, sanitary inspection of meat. People going to the former Yugoslavia, to visit or for an extended period of time, such as foreign military troops or humanitarian aides, must be warned of the risk of acquiring trichinellosis because of their potential exposure to infested, inadequately cooked pork. In addition to this preventive role, Western physicians

should ask about recent travel in the former Yugoslavia when confronted with symptoms suggestive of trichinellosis.

*Agnès Lefort*[1], *Olivier Lortholary*[1], *Jean Dupouy-Camet*[2], *Jean Jacques Rousset*[3], *Loïc Guillevin*[1]
[1]Service de Médecine Interne, Hôpital Avicenne, Université Paris-Nord, 93009 Bobigny Cedex, France; [2]Laboratoire de Parasitologie, Hôpital Cochin, Université René-Descartes, Paris, France; [3]Laboratoire de Parasitologie, Hôpital Avicenne, Université Paris-Nord, France

**References**

1. Capo V, Despommier DD. Clinical aspects of infection with *Trichinella* spp. Clin Microbiol Rev 1996; 9: 47–54.
2. Dupouy-Camet J, Soulé C, Ancelle T. Recent news on trichinellosis: another outbreak due to horsemeat consumption in France in 1993. Parasite 1994; 1: 99–103.
3. Nothdurft HD, Brommer M, Eichenlaub D, Loschert T. A small outbreak of trichinosis caused by imported smoked ham. Dtsch Med Wochenschr 1995; 120: 173–6.
4. Soulé C, Dupouy-Camet J. La trichinellose, une zoonose en évolution. CNEVA-OIE: Paris, 1991: 72–3.

## Group B streptococcus: rapid intrapartum detection and influence of density of maternal colonization on vertical transmission

*Clin Microbiol Infect* 1997; 3: 507–509

Group B streptococcus (GBS) is one of the leading causes of neonatal infection, with an incidence of 1–3 cases per 1000 live births [1]. Identification of maternal carriage allows chemoprophylaxis during delivery and thus reduces the morbidity of GBS infection. The incidence of colonization with GBS among pregnant women is from 5% to 30% [2,3]. It has been reported that up to 10% of mothers carrying GBS at term were negative when screened at 28 weeks of gestation, because of either a false-negative test or later acquisition of GBS [4,5]. Conventional culturing methods for GBS require 18–24 h, and this is too long a delay before decision about treatment at the beginning of labor. For these reasons, there has been much recent work to develop methods for the rapid diagnosis of GBS, allowing selective treatment at the time at which colonization is most significant for the fetus. Our study had two purposes: first, to evaluate a rapid enzyme immunoassay (ICON test) which could be performed intrapartum, by comparing its results with a simultaneous quantitative culture method for GBS; second, to determine the influence of the density of maternal colonization on the vertical transmission of GBS.

This study included, during 1 year, 486 women who had not previously been shown to be colonized by GBS. Three vaginal samples were obtained from each woman in early labor. Vaginal samples, obtained with swabs introduced 3–4 cm into the vagina, were used rather than cervical specimens, because obstetricians preferred to avoid speculum examination at the beginning of labor. A dry swab was used for the rapid ICON immunoassay (ICON StrepB, Biotrol, France), as recommended in the manufacturer's instructions. Two other swabs were put in transport medium. The first was used to inoculate 5% sheep blood agar with or without antibiotics (nalidixic acid plus colistin) and heated blood agar (Mérieux, Lyon, France) incubated aerobically at 37°C. GBS were identified on the basis of Gram stain and a negative catalase reaction and were grouped using the Streptex Lancefield grouping reagents (Wellcome Diagnosis, Research Triangle Park, MC). The second was placed in 1 mL sterile saline which was serially 10-fold diluted in sterile saline from $10^{-2}$ to $10^{-6}$. One hundred microliters of each dilution was plated on blood agar and incubated. GBS colonies were then counted.

We used different swabs for plating and the rapid test to avoid previous inoculation on several plates, which may wipe off a significant proportion of the antigen, as described by Skoll et al [6]. Gastric aspirates and superficial samples (external ear canal, anus) from all newborns obtained as soon as possible after birth were cultured on blood agar (Lyon, Mérieux, France). Early-onset disease is defined as the development of symptoms during the first 5 days of life, and has a mean age of onset of 20 h. The three major clinical manifestations are bacteremia, pneumonia and meningitis.

Among the 486 women enrolled in the study, 412 were negative for GBS by both methods and 72 (14.8%) gave a positive culture for GBS. Only 19 women scored positive by both culture and the ICON test, whereas 52 scored positive by culture and negative by the ICON test. Only three women had a positive ICON test and a negative culture. The overall sensitivity of the ICON test was 26.8% and the specificity was 99.3%. Its positive predictive value was 86.3% and negative predictive value 88.8%. Of the 19 positive tests with