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Abstract (poster session)

Molecular epidemiology of Legionnaires' disease (LD) in Israel

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Objectives: (1) To describe the epidemiology of LD in Israel; (2) delineate the molecular epidemiology of Legionella pneumophila (Lp) strains; (3) compare the distribution of Lp strains in Israel and Europe Methods: Data regarding LD were collated through mandatory national reporting (2006-2011). Clinical data were extracted from hospital records and epidemiological data from outbreak investigation. LD was defined as an acute respiratory infection plus any laboratory evidence for Lp infection (culture, PCR, serology or urinary antigen). Lp was identified using standard methods and serogroup (sg.) was determined using a commercial kit. Subtyping was performed using the Dresden monoclonal Ab Panel. Molecular typing was performed using the Sequence-Based Typing (SBT) method of the European Working Group on Legionella Infection (EWGLI). ST prevalence was compared using the SBT database. Results: In all, 294 LD cases were reported (mean 49/year, annual incidence 0.6-0.9 cases/100,000). The most affected age band was 65+ years (52%) with an age specific incidence of 2.3/100,000/year. Two-thirds of cases occurred in the hot season (Jun-Nov) and 68.4% were males. A setting of exposure was known for 53%, of which 45% were nosocomial, 40% community-acquired and 15% travel-associated. The most common risk factors, other than age, were immune compromise (25.5%), renal failure (19%) and diabetes (16%). Diagnosis was made using urinary Ag in 80%. Mortality rate was 12.6%. Of clinical cases, 23 strains were available for characterisation, including 17 sg.1 and 6 non-sg.1 Lp strains. Of sg.1 Lp, 11 were OLDA/Oxford, 4 Allentown/France, 1 Benidorm and 1 Knoxville, belonging to ST1 (n=11), ST40 (n=2) and ST23, ST87, ST338 and ST345 (1 each). Notably, 4 novel STs were detected and 2 were untypeable. Of 23 environmental strains analysed (5 sg.1 (OLDA/Oxford), 12 sg.3 and 6 sg.6), SBT yielded ST1 (n=5), ST338 (n=4), other STs (n=6) and novel STs (n=8). Conclusion: (1) The clinical features of LD in Israel are similar to those reported from the EU; (2) The 'OLDA/Oxford, ST1' phenon which is uncommon overall in Europe (<2% of database entries), appears to be the most common cause of LD in Israel, possibly due to a higher proportion of nosocomial cases; (3) ST338 which is rare in Europe (0.1% of entries) appears abundant in Israel; (5) That 26% of strains yielded novel STs suggests that Lp in Israel warrants further molecular investigation.