tests for *B. pertussis*. As a serologic test, the agglutinin titers against Tohama and Yamaguchi strain are measured widely in Japan. The criterion for infants pertussis established by the National Institute of Infectious Diseases was employed: a \[ \geq 1:40 \] agglutinin titer of Yamaguchi strain has a diagnostic value. But there is not a universal criterion of the agglutinin titer for adolescent/adult pertussis. We describe about epidemiologic circumstance of a sudden rise in the incidence of pertussis in our University, and the distribution of the agglutinin titers against Tohama and Yamaguchi strain in the patients with adolescent/adult pertussis.

**Patients and Methods:** We analyzed an agglutinin titer against Yamaguchi and Tohama strain for patients with prolonged cough.

**Results and Conclusion:** In mid-May, an index case was diagnosed as suspecting pertussis. Until early July, a total of 361 students/faculty members visited the Health Science Center for the chief complaint of cough, and about 80% people were diagnosed as pertussis. It was considered that pertussis is spreading over the university. Patients diagnosed with pertussis were treated with macrolides. We analyze the agglutinin titers in the patients with pertussis. The agglutinin titer against Yamaguchi strain of \[ \geq 1:40 \] was detected in 290 students/faculty members. Maximum agglutinin titer against Yamaguchi strain was 1:5120, and the class with the largest frequency was 1:160.

doi:10.1016/j.ijid.2008.05.1313

**Application of An Innovative Seminested PCR Test for Identification and Detection of Ten Medically Important Candida Species**

L.T.L. Than, K.P. Ng, P.P. Chong, H.F. Seow

1 Universiti Putra Malaysia, Serdang, Malaysia
2 University of Malaya, Kuala Lumpur, Malaysia

*Candida* is a genus of yeasts that is now the fourth highest contributor to nosocomial bloodstream infections in the United States. Identification of the species is crucial in the clinical management of these infections as some of the species are not susceptible to the "gold standard" antifungal, fluconazole. Thus, an innovative seminested PCR test for identification of ten medically important *Candida* species was invented. The species are *C. albicans* (CA), *C. dubliniensis* (CD), *C. glabrata* (CGL), *C. guilliermondii* (CGU), *C. kefyr* (CKE), *C. krusei* (CKR), *C. lusitaniae* (CL), *C. parapsilosis* (CP), *C. rugosa* (CR) and *C. tropicalis* (CT). Briefly, DNA was extracted using conventional method and subjected to two rounds of PCR with a common set of primers for the former and species specific reverse primer for the latter. The PCR products were then subjected to gel electrophoresis. Specificity testing was determined by using DNA of the ten *Candida* species (ATCC strains) and six *Aspergillus* species (ATCC strains). Sensitivity testing was determined by performing the PCR using a factor of ten times serial diluted DNA extracted from one million cells/conidia. No amplicons were observed for all the species tested other than the targeted ones. Thirty-one *Candida* clinical isolates were also tested and they were identified accurately according to the species. Amplicons were seen from as low as 1 cell (CP and CR), 10 cells (CA, CD, CGL, CKR, CL and CT) and 100 cells (CGU and CKE). The total reaction time taken from DNA extraction to gel visualisation can be performed within one working day which is relatively shorter than culture method and the cost per test is as low as RM 1 or USD 0.30. This simple and economical method yet with considerable specificity and sensitivity will certainly offer another alternative in detection of these pathogenic yeasts.

doi:10.1016/j.ijid.2008.05.1314

**Variation in Pilus Encoding Gene Cluster between O1 and Non-O1 Serogroups of *Vibrio cholerae* in Iran**

H. Mohammadi Barzelighi*, B. Bakhshi, A. Rastegar Lari, M.R. Pourshafie

Pasteur Institute of Iran, Iran University of Medical Sciences, Tehran, Iran (Islamic Republic of)

**Background:** Two important virulence factors in *Vibrio cholerae* are cholera toxin (CT) and toxin co-regulated pilus (tcp) in VPI. VPI is one of the initial factors required for the emergence and pathogenesis of epidemic *V. cholerae*. The central segment of VPI contain of TCP gene cluster that is approximately 13kb in size and including proteins involved in synthesis of tcp. Tcp is an important protein that involve in intestinal colonization of bacteria, microcolony and biofilm formation. The aim of this study was to detect the presence and diversity of VPI genes in O1and Non-O1 serogroups of vibrio cholerae that isolated from patients and environment in Iran.

**Materials and methods:** Twenty clinical and forty environmental isolates of *V. cholerae* obtained and serogrouped using O1 and O139 antisera. The identity of isolates was investigated using conventional biochemical tests and confirmed by a species-specific PCR. Eight pair of primers used to analysis VPI cluster which is approximately 41 kb in size. Each pair of primers amplifies within the internal region of the individual genes in the cluster. PCR products were confirmed by restriction fragment length polymorphism (RFLP).

**Result:** Specific biochemical tests and serogrouping of isolates showed that 25% of clinical isolates were O1-Ogawa and 75% were O1-Inaba while 100% of environmental strains were non-O1, non-O139. PCR analysis indicated that 100%, and 90% of clinical strains were positive for RJ and LJ genes and prevalence of the int, ald, tcpA, tagA, toxT and acfB-C were 95% in this group of isolates. Only one of the environmental isolates (2.5%) contained the whole cluster the whole cluster and the remaining 97.5% did not carry any of the genes within the cluster.

**Conclusion:** This study demonstrates the presence of critical virulence genes or other homologues in clinical strains and emphasizes the importance of monitoring *V. cholerae* non-O1, non-O139 serogroup strains for their virulence gene content in order to assess their epidemic potential.

doi:10.1016/j.ijid.2008.05.1315