Feature:
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Review of food poisoning associated with Vibrio parahaemolyticus in Hong Kong in the past decade

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Vibrio parahaemolyticus (VP) is one of the most common bacterial pathogens associated with seafood throughout the world. It is also one of the leading causes of food poisoning in Hong Kong. Below we reviewed the local epidemiology of VP related food poisoning recorded by the Centre for Health Protection (CHP) of Department of Health (DH) since 2001.

From 2001 to August 2011, around 6800 food poisoning outbreaks were recorded. More than 40% (about 2800 outbreaks) of them were suspected to be related to VP and about 1000 outbreaks had laboratory confirmation, affecting more than 4700 persons (Figure 1). The annual number of laboratory confirmed food poisoning outbreaks associated with VP varied from 36 to 172 from 2001 to 2010 (Figure 1). Most of these food poisoning outbreaks were locally acquired, with only 4% associated with food consumed outside Hong Kong. Over the years, a seasonal pattern of food poisoning is noted with more outbreaks occurring in summer months from June to August (Figure 2). Most (93%) of the outbreaks affected fewer than 10 persons with a median number of 3 persons affected in each outbreak. The male to female ratio was 1:1.3. Most (70%) of these food poisoning outbreaks were associated with food consumed at food premises (Figure 3).

Seafood such as shrimp, squid and marine fish as well as sashimi and sushi were the most frequently implicated food items. Cross contamination (46%) and inadequate cooking (30%) were considered
as the most common contributory factors. There has been a significant decline of reported food poisoning due to VP since 2007. The Centre for Food Safety has been actively collaborating with the food trade and restaurants to promote food hygiene through Hazard Analysis and Critical Control Points (HACCP) and other measures.

During food preparation, we can effectively prevent food poisoning by following the 5 keys to food safety as promulgated by World Health Organization. For instance, raw seafood should be stored and handled separately with other ready-to-eat food to prevent cross contamination. It should also be thoroughly cooked before consumption. Other measures include sourcing safe raw materials from reliable suppliers and store ready-to-eat food under proper temperature (at or below 4°C or above 60°C). The public are reminded to observe personal and food hygiene in order to prevent food poisoning.

More information can be found in the paper “Food poisoning associated with Vibrio parahaemolyticus in Hong Kong – current situation and recommendations” published by the Scientific Committee on Enteric Infections and Foodborne Diseases, which is available at the website of CHP: http://www.chp.gov.hk/en/sas4/101/110/104.html.

Genital Chlamydia Trachomatis infection in Hong Kong

Chlamydia trachomatis (CT) is a small bacterium that causes eye and genital tract infection in human. The serovar types L1, L2 and L3 are associated with lymphogranuloma venereum, a sexually transmitted disease which is very uncommon in Hong Kong. The serovar types B, D to K are associated with genital tract infections including non-gonococcal urethritis in men, mucopurulent cervicitis and pelvic inflammatory disease in women. Genital tract CT infections are one of the most common curable sexually transmitted infections worldwide and account for up to 50% of non-gonococcal urethritis in men and a substantial portion of mucopurulent cervicitis in women. Although at least 70% of infected females and 25% of infected males are asymptomatic, undetected and untreated infections may result in damaging and costly reproductive outcomes. Complications of CT infection are mainly found in women including cervicitis and pelvic inflammatory disease (PID) and hence leading to chronic pelvic pain, infertility and ectopic pregnancy. Recent reports have also linked CT to an increased susceptibility to cervical cancer and the human immunodeficiency virus (HIV). Women infected with CT are more likely to become infected with HIV, if exposed. Furthermore, perinatal infection is a serious health threat to the newborns with 30-50% of infected children developing inclusion conjunctivitis and 20% systemic infection such as pneumonia. This article briefly summarises the local situation of genital CT infection caused by Chlamydia trachomatis (CT) serovars B, D to K in Hong Kong.

Published epidemiological studies of genital CT infection in Hong Kong were mainly focused on high risk subgroups of the population. Lim reported in 1994 a 10.2% prevalence in 2439 samples collected in 1992 to 1993 by the previous Government Virus Unit obtained from high risk or symptomatic women. Samples were collected in clinical settings of suspected pelvic inflammatory disease, sexually transmitted diseases, teenage pregnancy, termination of pregnancy, vaginal discharge/cervicitis, and others. Further analysis of the results revealed high rate of infection among teenagers (20.7%), who made up 36.7% of the total positive cases. A study of 249 pregnant women attending 3 Maternal and Child Health Centres in 1991 for routine check revealed a positive rate of 4.8%. In another study conducted in 1990, Chan and Lim reported an 8.9% prevalence in 503 endocervical swabs collected from women admitted to gynaecological wards, among whom those in their late teens showed an even higher rate of infection (19%). Chlamydial infection was also common among sex workers in Hong Kong, with prevalence rates of 4.6 to 13% reported in 1990, 2000 and 2011 in Hong Kong, which are higher than those reported in other developed countries. The reasons for the higher prevalence of CT in Hong Kong are not fully understood, but may be due to factors such as sexual activity, use of condoms, and socioeconomic status. Women with a high risk of infection were more likely to be educated, with 42.4% of those with a university education having a positive CT test compared to 25.3% of those with no formal education. This highlights the need for targeted interventions to reduce risk of infection.

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public or community based sexually transmitted disease (STD) clinic settings\textsuperscript{11, 12, 13}. A more recent study published in 2009 involving 225 Hong Kong based cross border truck drivers revealed a prevalence rate of 8.5%\textsuperscript{14}. In another hospital based study conducted in 2004 to 2005, the incidence of neonatal chlamydial conjunctivitis was found to be 4 per 1000 live birth\textsuperscript{15}. As these studies were carried out in highly selected population subgroups, the prevalence rates cannot be extrapolated to the general population.

Social Hygiene Service (SHS) of the Department of Health operates public Social Hygiene Clinics in 6 districts in Hong Kong, providing free of charge walk-in clinical sexually transmitted disease service to eligible local people. All female first time attendees are routinely offered sexually transmitted infection screening tests irrespective of symptoms, including cervical sampling for CT testing by nucleic acid amplification test (NAT). For male first time attendees, urethral swab specimens are only obtained in symptomatic patients. For people who attend Social Hygiene Clinic in subsequent visits, sampling for CT NAT in additional to on-site microscopy may be taken according to the clinical assessment of the attending doctors.

Eight hundred and forty two and 716 new cases of genital CT were recorded by SHS in 2009 and 2010 respectively (Figure 1). More females were affected and the female to male ratio was 1.9:1. The actual number of cases detected in the younger group aged 19 or below comprised about 12-13% of total cases. This has to be understood in the context of SHS which is underutilized by this group of people who contributed only to <5% of total STD/reproductive tract infections captured by SHS. Therefore, this observation is consistent with the prevalence data in many other countries i.e. genital CT is more prevalent among the young adults.

Public Health Laboratory Centre of the CHP also conducts tests for Chlamydia trachomatis samples collected from various sources. While the total number of specimens received was increased from 12873 to 14760 from year 2005 to 2010, the positive rates slowly declined from 18.67% in 2005 to 15.07% in 2010 (Table 1). In conclusion, genital CT infection poses a significant risk to the sexual and reproductive health of the local population. While the efficacy of targeted screening is not yet conclusive, prevention by promotion of safer sex and early detection and treatment are the current strategies adopted.

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SUMMARY OF SELECTED NOTIFIABLE DISEASES AND OUTBREAK NOTIFICATIONS (WEEK 43 - WEEK 44)

**Hand, Foot & Mouth Disease Outbreaks**

- Week 41: 12
- Week 42: 10
- Week 43: 203
- Week 44: 13

**Influenza-like Illness (ILI) Outbreaks**

- Week 41: 7
- Week 42: 8
- Week 43: 7
- Week 44: 3

**Food Poisoning**

- Week 41: 4
- Week 42: 1
- Week 43: 4
- Week 44: 3

**Gastroenteritis Outbreaks**

- Week 41: 0
- Week 42: 4
- Week 43: 7
- Week 44: 1

**Measles**

- Week 41: 1
- Week 42: 0
- Week 43: 1
- Week 44: 0

**Tuberculosis**

- Week 41: 86
- Week 42: 76
- Week 43: 113
- Week 44: 87

**Chickenpox**

- Week 41: 159
- Week 42: 198
- Week 43: 203
- Week 44: 244

**Hepatitis A and Hepatitis E**

- Week 41: 5
- Week 42: 1
- Week 43: 1
- Week 44: 1

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