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<th>Identification of Hepatitis B Virus DNA Polymerase Sequences to Predict Virological Response to Entecavir Therapy</th>
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<td>Wong, DKH; Kopaniszen, M; Omagan, K; Tanaka, Y; Fong, D; Seto, WKW; Fung, JYY; Huang, FY; Zhang, AY; Hung, IFN; Lai, CL; Yuen, RMF</td>
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Conclusions: The lack of substantial change in preventive measures or knowledge about the modes of H1N1 transmission in the general population suggests that community mitigation measures played little role in mitigating the impact of the first wave of 2009 influenza A(H1N1) pandemic in Hong Kong.

Ref. No.: PHE-1810 (HKU)

P84-Ab0047

Behavioural Changes in Relation to Risk Perception and Prevention of Avian and Human Influenza in the General Population of Hong Kong, 2006 to 2010

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Background: The Hong Kong government has introduced a series of progressive measures on importation, farming and retail of live poultry to minimize risk of A/H5N1 transmission since 1997. Perceived risk of A/H5N1 and related prevention could decline as these macro-level policies minimizing human-chicken contact. This may paradoxically increase population risk of other influenza and respiratory infection due to reduced preventive behaviours.

Objectives: A follow-up survey in 2010 was conducted to investigate change of live poultry exposure, risk perception and prevention of A/H5N1 among respondents who participated in the random household telephone survey in 2006.

Methods: Totally, of 1,760 respondents who completed the 2006 survey, 680 could be traced and 461 (68%, 461/680) agreed and completed the repeated telephone survey between July and August 2010. Prevalence of buying and touching, perceived risk of A/H5N1, worry, and protective hygiene practices were compared between 2006 and 2010 using descriptive analysis. How changes of these variables differed by respondents’ demographics and change of perceived risk and worry led to change of buying and practices of hygiene were further explored by multivariate logistic regression analyses.

Results: Prevalence of household buying live poultry declined from 73% in 2006 to 41% in 2010. Buying household bought on averaged 11.4 chicken/household/year in 2010 versus 14.4 in 2006 while touch rate remained unchanged (5%). Overall exposure (touch rate x purchase rate) declined by 21% from 2006 to 2010 (0.72 vs. 0.57 exposure/household/year). Most personal hygiene practices improved from 2006 to 2010 except that frequency of daily hand-washing and covering mouth when sneezing and coughing declined. Male respondents reported less likely to cover mouth when sneezing or coughing (OR=1.60, 95%CI: 1.00-2.56) while immigrants were more likely to report reduced frequency of daily hand-washing (OR=1.58, 95%CI: 1.04-2.41). Perceived risk from buying live poultry and worry about contacting A/H5N1 declined from 2006 to 2010. Younger respondents were more likely to report declined worry and risk from buying live poultry. Declined worry was associated with less hygiene practices (OR=1.61, 95%CI: 1.04-2.47).

Conclusions: The decline in buying prevalence may be attributed to limiting poultry availability. However, among buyers, prevalence of touching poultry remained unchanged, suggesting little effect from public health promotion to change purchasing-related behaviours. Perceived risk from buying, A/H5N1 worry and some hygiene practices declined, suggesting that risk of contracting human influenza viruses could increase. Young males and immigrants should be the major target for public health education to promote hygiene practices.

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P86-Ab0052

Identification of Hepatitis B Virus DNA Polymerase Sequences to Predict Virological Response to Entecavir Therapy

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Background and Aims: Entecavir is a potent antiviral agent that often reduces hepatitis B virus (HBV) DNA to an undetectable level after one year of treatment, but HBV DNA may remain detectable in some patients. We aimed to determine whether baseline HBV reverse transcriptase (RT) sequence polymorphism

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and quasispecies complexity and diversity were associated with treatment response.

**Methods:** Pre-treatment HBV DNA levels, HBV rt sequence, and serology from a cohort of 305 entecavir-treated patients were determined. Quasispecies complexity and diversity were determined by clonal sequencing and analyzing using MEGA software. These data were tested for the association with year one virological outcome, defined by optimal response (undetectable HBV DNA; ≤12 IU/mL) or partial response (detectable HBV DNA).

**Results:** Four rt variants were more frequently detected in the 64 partial responders than in the 241 optimal responders (43.8-51.6% vs. 20.1-27.4%, all P < .05). Multivariate analysis revealed that high baseline HBV DNA (P < .0001; odds ratio [OR] = 2.31), hepatitis B e antigen (HBeAg)-positivity (P < .001; OR = 3.68) and rt124N (P = .001; OR = 3.09) were associated with partial entecavir response. Molecular clocking model suggested that rt124N possibly cause a slight steric hindrance to entecavir binding. Compared with the optimal responders, the partial responders had a lower quasispecies complexity and diversity at both the nucleotide and amino acid levels.

**Conclusions:** Apart from the known factors (high baseline HBV DNA, HBeAg-positivity), a novel single nucleotide polymorphism (rt124N) and lower quasispecies complexity and diversity were associated with partial entecavir response at year 1. Identification of these viral factors can assist in choosing an optimal antiviral treatment for individual patients.

Ref No.: 08070852

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**P88-Ab0058**  
**Effect Modifications of Lifestyle Factors on Risk of Mortality Associated with Influenza in an Elderly Cohort**

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**Background:** Influenza has been associated with a heavy burden of mortality and morbidity. The prevention strategy relies on vaccines and antiviral drugs, while there have been few studies which tackled the effects of healthy lifestyle on influenza to provide evidence for promoting an adjunctive approach.

**Aims and Objectives:** To assess the effects of smoking, alcohol drinking and exercise on influenza associated mortality risks and address the role of health lifestyle as adjuncts to vaccination and antiviral medication in prevention of influenza.

**Methods:** We collected the baseline lifestyle information of 66,820 persons aged 65 or above recruited by 18 Elderly Health Centers (sample fractions 6.5 - 17.2%) in Hong Kong from May 1998 to December 2001. The subjects were followed up for health outcomes till December 2009, by anonymously linking the death records of deceased subjects to the baseline data. Effect modification of each lifestyle factor on influenza associated excess mortality risk from all-natural and cardiopulmonary causes was assessed by time-dependent Cox proportional hazard model. The mortality excess risks associated with influenza for categories of each lifestyle factor were also separately assessed by stratified analysis.

**Results:** We found that influenza associated mortality risks were higher in ex- and current-smokers compared to never smokers, and the associations were particularly high in female smokers (Wong et al. 2013). Compared to never-drinkers, ex-drinkers had a higher while social/regular drinkers had a lower excess risk associated with influenza. Among the exercise groups, sedentary people had a higher and frequent exercisers had a lower excess risk associated with influenza. An U-shape pattern across the underweight, normal, overweight, moderate obesity and severe obesity groups was observed in influenza associated mortality risks (Yang et al. 2012).