

最終試験の結果の要旨

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主査および副査の5名は、平成29年1月10日、学位申請者 Lai Thi Minh Hang 君に面接し、学位申請論文の内容について説明を求めると共に、関連事項について試問を行った。具体的には、以下のような質疑応答がなされ、いずれについても満足すべき回答を得ることができた。

1. What is the difference among three Arabian type water pipe tobacco (WPT): hookah, shisha, and narghile?

A: There is no difference among them. Arabian type WPT is called in different ways in different countries.

2. What is the most important carcinogen in Vietnamese WPT?

A: She *et al*, reported that PAH and heavy metals are important carcinogens in Vietnamese / Chinese WPT.

3. Which carcinogenic ingredient(s) are reduced after water filtration? How much is that reduced?

A: Recently, Al-Kazwini *et al*. reported that only 3% of metals including Cr and Pb was reduced after the water filtration. There is no study for other components.

4. Why didn't you ask flavored tobacco use by questionnaire?

A: Since we do not use flavored tobacco for WPT smoking in Vietnam, that question was not included.

5. Flavored tobacco change chemical composition in the smoke of Arabian WPT. How is that changed?

A: Casing (flavor) or sauce materials are added to tobaccos to help smooth out the smoke as well as act as a base flavor. Casings for smoking products often contain sugar, licorice, cocoa or chocolate liquor and sometimes natural extracts. Sugar restores a chemical equilibrium between the acid forming and base forming constituents of the smoke, resulting in a reduction of harsh and irritating effects of the smoke.

6. Do you share the instrument of WPT in Vietnam?

A: Yes, they do. More than half of WPT smokers shared the instrument with other person (GATs 2010).

7. What kind of water do you use for WPT in Vietnam?

A: Usually, tap water or drinking water is used.

8. Are tobacco leaves for WPT available in the street? Do some people grow tobacco by themselves?

A: Tobacco leaves for WPT are sold at a store. Very few people may grow it by themselves.

9. What is the main source of CO in Vietnamese WPT which charcoal is not used?

A: According to the report of Chinese WPT, which is similar to Vietnamese one, high CO levels have been attributed to the incomplete combustion of tobacco produced by the large volume of smoke WPT.

10. Are there any longitudinal studies on the association between WPT and oral cancer?

A: No, there aren't. There is one cross-sectional study on the association between WPT and oral cancer.

11. What is the difference in lifestyles among three study areas?

A: Among the study areas, Hanoi is more urbanized area than others, and people in Hanoi can afford to smoke cigarettes and to buy a refrigerator, which may affect their diets.

12. Did you ask the amount of citrus fruits consumption? What are the major citrus fruits in Vietnam?

A: Although we did not ask the amount of citrus fruits consumption in the questionnaire, I think that daily amount of citrus fruits intake might not largely vary among individuals. The major citrus fruits in Vietnam are orange, grapefruit, and tangerine.

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13. Citrus fruits intake reduces GC risk. Is *H. pylori* infection related to Vit. C levels in gastric juice?
A: Yes, a decrease of vitamin C level in gastric juice has been reported in *H. pylori*-infected patients, which returned to normal level after eradication of the organism.

14. How high was GC risk among exclusive WPT ex-smokers?

A: GC risk in exclusively WPT ex-smokers was not significantly increased, OR=1.2, 95%CI=0.3-4.1.

15. Anh et al. reported a high risk of lung cancer in WPT smokers. Did the authors exclude the cigarette smokers from the analysis?

A: Yes, they did but they did not adjust for the effects of any potential confounding factors.

16. How high is *H. pylori* infection rate in normal population and GC patients in Vietnam?

A: Its prevalence was reported around 75% and 70% in normal population and GC patients, respectively.

17. Please explain the reason why you have not taken into account *H. pylori* infection as a confounder.

A: One of the main reasons was the IARC report saying that "*H. pylori* is of little or no relevance with regard to potential confounding of the association between (cigarette) smoking and stomach cancer". In addition, we could not examine *H. pylori* antibody in all study subjects.

18. Around 40% of the subjects did not have a refrigerator. How do they keep foods?

A: In the study period, 2003-2011, many people do not have a refrigerator at home in Vietnam. Most of them preserve foods with salt to keep them for long time.

19. What is the average of salt intake in Vietnam?

A: The average salt intake in Vietnam is 12-15 g/day (National Institute of Nutrition 2011).

20. Why did you exclude the variable of refrigerator use from the statistical model?

A: We excluded this variable because of a relatively-large number of missing data of refrigerator use (n=80). In addition, there were strong correlations between refrigerator use and other socio-economic indicators.

21. Is histological distribution of GC in Vietnam different from that in Japan?

A: Unlike to the histological distribution of Japanese GC (54% and 45% for intestinal and diffuse types, respectively), most of Vietnamese GCs were intestinal type (more than 80%).

22. How do you diagnose GC? Did GC patients have clinical symptom(s) when they were diagnosed?

A: They were diagnosed pathologically. We do not have GC screening service in Vietnam, and almost all GC patients came to hospitals because of their clinical symptoms.

23. How was the distribution of clinical stage for GC patients?

A: Although we did not collect data on clinical stage for GC cases, Anh *et al.* (2002) reported that 65-80% of GC patients in Vietnam were at advanced stage, stage 3 or 4.

24. What is the mean age of GC patients in your study? Is that similar to those in other studies?

A: Mean age of GC cases in this study was 57 years old, which is relatively younger than that reported from Hanoi Oncology Hospital 2010-2012, 61 years old.

25. What was the response rate of your study subjects?

A: We estimated the response rate of approximately 95%.

26. Is there any difference in the backgrounds between WPT smokers and cigarette smokers?

A: WPT smoking is more common in farmers, elder people, and those with lower socio-economic status.

27. According to your results, the daily frequency of WPT smoking is nearly equivalent to the number of cigarettes per day. How do you evaluate the carcinogenic impact between them?

A: Although we cannot compare the carcinogenic impact between WPT and cigarette smoking directly, our results indicated that one session of WPT smoking may be more carcinogenic than one cigarette smoking.

28. What was your role in this study?

A: I was mainly involved in interview survey, data analysis, and preparation of the manuscript.

29. Do Vietnamese know the risk of WPT smoking? How do you spread your findings to the society?

A: Vietnamese people underestimate the risk of WPT smoking. We need to conduct educational campaigns for anti-smoking including WPT, especially targeting young people.

以上の結果から、5名の審査委員は申請者が大学院博士課程修了者としての学力・識見を有しているものと認め、博士(医学)の学位を与えるに足る資格を有するものと認定した。