Reviewer's report

Title: The hypertriglyceridemic-waist phenotype predicts prediabetes and diabetes: a cohort study in Chinese urban adults

Version: 1 Date: 3 October 2012

Reviewer: Donna Roche

Reviewer's report:

Major Compulsory Revisions
1) What is the rationale for analyzing results for males and females separately? This is not addressed in the introduction or method sections? The objective of the study also does not state that sex differences will be assessed. This should be added if this is the intention of the authors.

2) Since the findings of this study showed that HTGW did not predict prediabetes in men, the authors should not state that the HTGW can be used to predict prediabetes. Since this study had a small sample size and a short follow-up period it seems ambitious to conclude that HTGW can predict prediabetes and diabetes.

Minor Essential Revisions

Introduction
1) Introduction discusses the how prediabetes and diabetes are risk factors for CVD and the increasing prevalence of prediabetes and diabetes in China. The authors mention that HTGW has been proposed as a useful and inexpensive tool to identify those at risk for CVD. Has HTGW been used to screen for CVD? If so, is it useful? Previous studies which have explored this should be mentioned.

2) What about the metabolic syndrome? How does the HTGW compare to the metabolic syndrome as an indicator of future CVD risk?

Methods
3) It’s noted that individuals without prediabetes and diabetes (<5.6 mmol/L) were included in the study. What criteria are being used to determine presence of prediabetes and diabetes?

4) What criteria are being used to categorize waist circumference and serum triglyceride concentration?

Results
5) The first paragraph in the results section refers to the accumulated incidence of prediabetes and diabetes, however, this data does not appear to be presented in Table 1. Should add a note saying this data is not presented.

Discussion
6) The discussion needs a lot of work. Most of the content discusses the
rationale/advantages for using the hyperglyceridemic-waist phenotype as a screening tool for prediabetes and diabetes. This is more suited to the introduction section.

7) Actual numbers should not be reported in the discussion section (Paragraph 1, Line 12 and 13)

8) Paragraph 3 mentions that the HTGW phenotype is associated with the development of prediabetes in women but not in men. The rest of the paragraph describes the ADA definition of prediabetes and the prevalence of prediabetes. This should be moved to the introduction section. No explanation is given for the finding that HTGW can predict prediabetes in women only. This should be expanded on. Also, since HTGW did not predict prediabetes in men, the authors should not state that the HTGW can be used to predict prediabetes. Or they should at least mention that perhaps it’s only useful for women.

9) Paragraph 4 should be moved to the introduction.

Conclusion

10) Since the findings of this study showed that HTGW did not predict prediabetes in men, the authors should not state that the HTGW can be used to predict prediabetes. Or they should at least mention that perhaps it’s only useful for women but more research is needed as this study had a small sample size and a short follow-up period.

Introduction:

11) Paragraph 2, Line 10 and 11: Suggested revision: As diabetes is becoming a serious threat to human being’s health, using a simple and inexpensive screening method for early diagnosis is particularly important.

12) Paragraph 2, Line 15: Change high risk to high-risk

13) Paragraph 2, Line 17: Change has to have

14) Paragraph 2, Line 19: add comma after Therefore

15) Paragraph 2, Line 20: insert the words ‘has been’ after phenotype

16) Paragraph 3, Line 28: However, this was a cross-sectional study which difficulty to derive HTGW from etiology of prediabetes and diabetes. This sentence needs to be reworded as it’s difficult to understand.

17) Paragraph 3, Line 29: Change we conduct to we conducted

Methods

Study Population:

18) Paragraph 1, Line 1: insert the word ‘the’ in before Health Examination Centre of Heping District.

19) Paragraph 1, Line 2: insert the word ‘year’s after persons aged 20

20) Paragraph 1, Line 6: change examination to examinations

21) Paragraph 1, Line 7: change all the participants to all participants

22) Paragraph 1, Line 8: change data of clinical and laboratory measurements to
Definition of terms:

23) Paragraph 1, Line 1: Suggested revision: Subjects were categorized into 4 phenotype groups based on the following cut-off points

Statistical Analysis

24) Paragraph 1, Line 4: categorical variable was showed as percent. Suggested revision: categorical variables were presented as percentages

25) Paragraph 1, Line 7: remove the following words: that stratified by waist circumference and triglyceride levels were both

26) Paragraph 1, Line 11 and 12: instead of saying ‘without and with adjustment’ say ‘with and without adjustment’

27) Paragraph 1, Line 14: suggestion revision for hazard ratio is hazard ratios.

Results:

28) Paragraph 1, Line 2: during 3 years shown in Table 1. Suggested revision: during the 3 year period are shown in Table 1.

29) Paragraph 1, Line 2: There were totally 2908 subjects. Suggested revision: There were 2908 individuals in total

30) Paragraph 1, Line 10: Replace ‘The subjects’ with ‘Individuals’

31) Paragraph 2, Line 14: Replace ‘Table 2 presented’ with ‘Table 2 presents’

32) Paragraph 2, Line 14 and 15: Replace ‘data stratified by the waist circumference and triglyceride levels’ with ‘data stratified by the 4 phenotype groups’

33) Paragraph 2, Line 15: insert ‘the’ before NWNT group

34) Paragraph 2, Line 16: insert ‘the’ before HTG group and before HTGW group

35) Paragraph 2, Line 16: insert ‘a’ before the word higher

36) Paragraph 2, Line 17 and 18: instead for spelling out low-density lipoprotein and high-density lipoprotein use LDL-C and HDL-C

37) Paragraph 2, Line 18 and 19: end the sentence after HDL-C and delete in men and women. Insert this sentence: This was found for both men and women.

38) Paragraph 2, Line 19: Change ‘In both gender’ to ‘For both men and women in the HTGW group, higher levels of fasting plasma glucose was found compared to those in the NWNT group’.

39) Paragraph 3, Line 22: Spell out Fig

40) Paragraph 3, Line 22 to Line 26: Suggested revision: Compared with the NWNT group, those in the HTGW group had higher incidence prediabetes and diabetes. Moreover, the cumulative incidence of prediabetes and diabetes in the HTG group and the EW group were higher than in the NWNT group. These findings were found for both men and women.

41) Paragraph 4, Line 28: Remove ‘compound factors, including’
42) Paragraph 4, Line 29 to 32: Suggested revision: Compared with participants in the NWNT group, those in the HTGW group an unadjusted hazard ratio (HR) (95% confidence interval [CI]) for future prediabetes of 1.36 (1.15-1.61) in men and 2.94 (2.19-3.94) in women.

43) Paragraph 4, Line 33: Replace ‘adjustment’ with ‘adjusting’

44) Paragraph 4, Line 33: Replace ‘compound factors’ with ‘covariates’

45) Paragraph 4, Line 34: Remove ‘not in men’ and replace with ‘only’

46) Paragraph 4, Line 34 to 36: Remove this sentence: ‘Therefore, there was gender-specific difference between hypertriglyceridemic-waist phenotype and diabetes.’

47) Paragraph 4, Line 36: Suggested revision: As shown in Table 4, participants in the HTGW group had an unadjusted HR (95% CI) of 7.01 (3.66-13.44) in men and 12.55 (4.76-33.05) in women for future diabetes compare to those in the NWNT group.

48) Paragraph 4, Line 39 and 40: Replace ‘compound factors’ with ‘covariates’

49) Paragraph 4, Line 40: Suggested revision: Hypertriglyceridemic-waist phenotype was associated with a 4.5 and 5.1-fold increase in diabetes risk for men and women, respectively. Although the enlarged waist phenotype group had a 3.7-fold increase in diabetes risk only in men after adjustment for covariates, the HR was lower than in the HTGW group (4.48).

Discussion

50) Paragraph 1, Line 6: Insert ‘A’ before recent and ‘the’ before Chinese

51) Paragraph 5, Line 62: Suggested revision: Our study has several limitations including short follow-up period, sample size, and lack of information on lifestyle and dietary intake. In addition, oral glucose tolerance tests were not performed at baseline, possibly leading to an underestimate of the incidence of prediabetes and diabetes and the impact of HTGW on the risk of these conditions.

52) Figure 1: Title should be changed to ‘Cumulative incidence of prediabetes stratified by the 4 phenotype groups for men and women’

53) Figure 2: Title should be changed to ‘Cumulative incidence of diabetes stratified by the 4 phenotype groups for men and women’

54) Table 1: Remove during 3 years in the table title

55) Table 2: Title should be changed to ‘Baseline clinical characteristics and laboratory data by the 4 phenotype groups’

56) Table titles for Tables 3 and 4 should be revised.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests