

Risk of incident atrial fibrillation with low-to-moderate alcohol consumption is associated with gender, region, alcohol category: a systematic review and meta-analysis

Lingzhi Yang¹, Wei Huang¹
¹Department of Cardiology, the First Affiliated Hospital of Chongqing Medical University, China



1. INTRODUCTION

Atrial fibrillation (AF) is the most common arrhythmia; it is a public health threat due to its related hospitalization and complications and is thought to be one of the most crucial risk factors for the global burden of disease and disability. Alcohol consumption is ubiquitous globally and is embedded as a culture in some parts of the world. The association between low-to-moderate alcohol consumption and AF has yet to be fully elucidated. The main purpose of this meta-analysis was to estimate the risk of incident AF related to low-to-moderate alcohol consumption.

2. METHODS AND MATERIALS

Thirteen studies with a total of 10 266 315 participants were included in this meta-analysis to evaluate the risk of incident AF with low-to-moderate alcohol consumption. The Quality in Prognosis Studies tool (QUIPS) was utilized to assess the risk of bias. Graphical augmentations to the funnel plots were used to testify the robustness of current analysis. A standard drink (SD) ranges from 10 to 12 g of ethanol. Chronic moderate alcohol consumption was reported by most studies to be 2 SDs per day. Chronic low alcohol consumption was defined as <1 SD per day.

3. RESULTS

After quality control and manual selection, 13 of studies included in qualitative synthesis.

Habitual moderate alcohol consumption increases risk of AF, while low consumption does not.

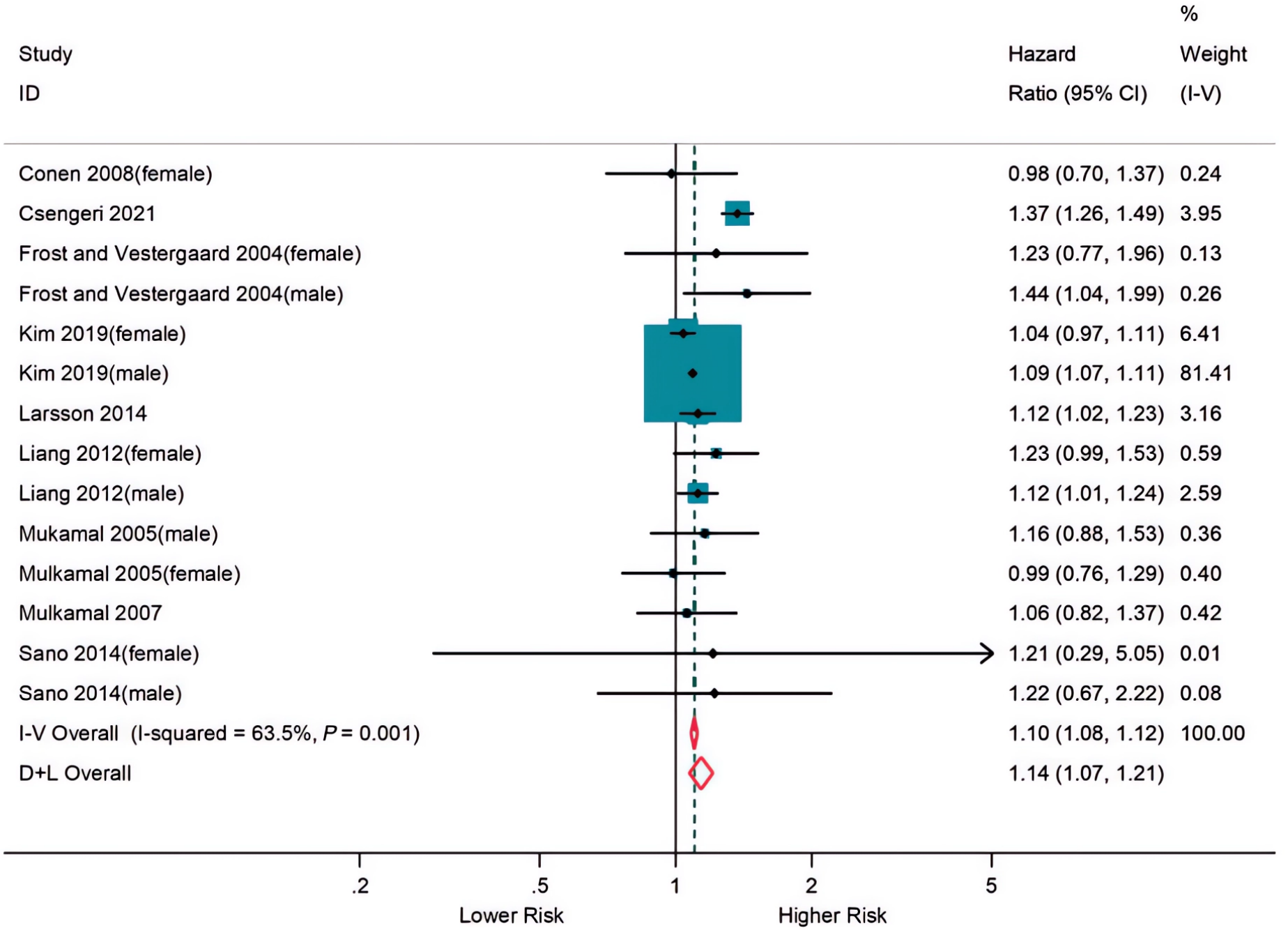


Figure 1: Pooled effects of incident AF with moderate alcohol consumption

Low and moderate alcohol consumption increased risk of incident AF in males but not in females.

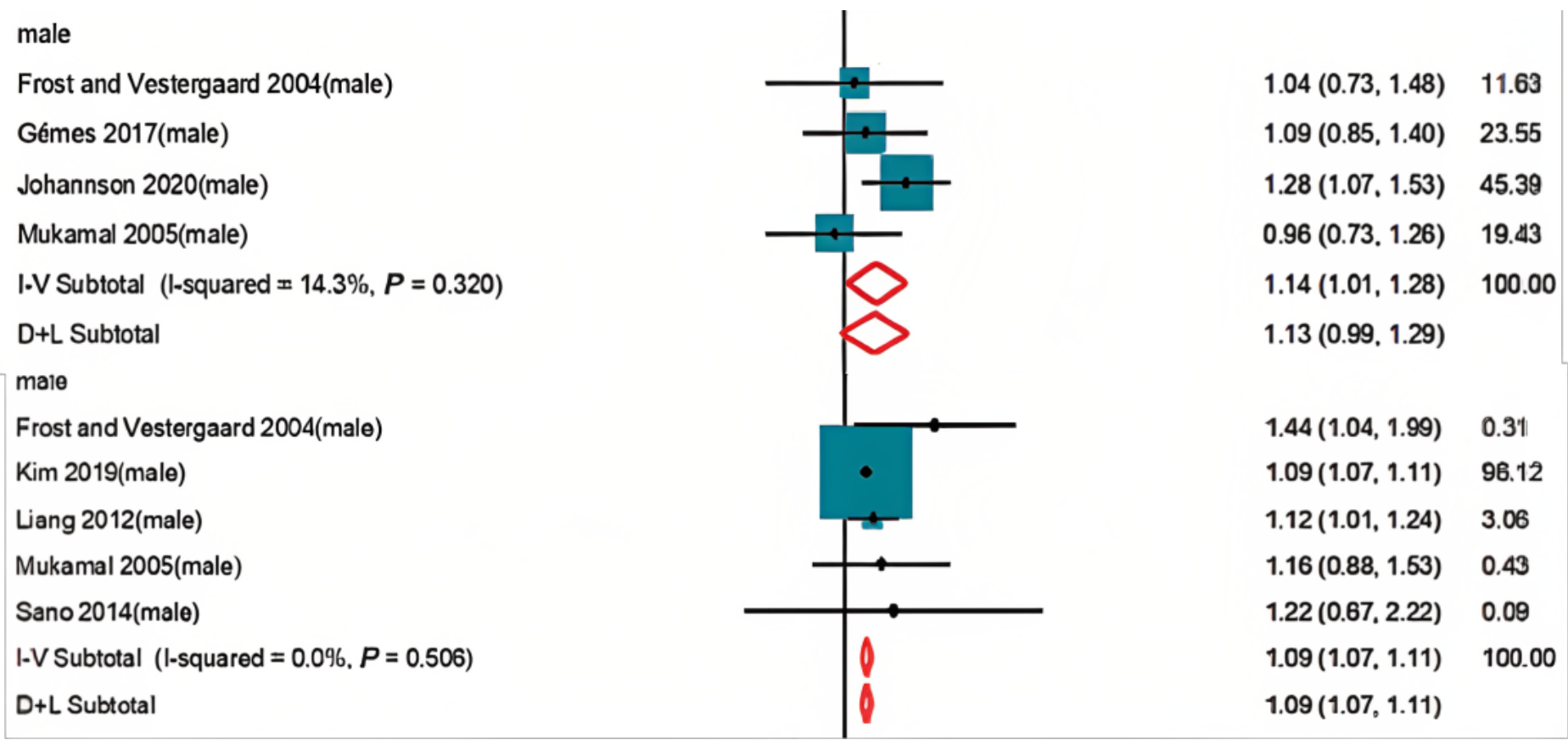


Figure 2: Risk of incident AF with low to moderate alcohol consumption in males

Low and moderate alcohol consumption increased risk of incident AF in Europeans and Asians.

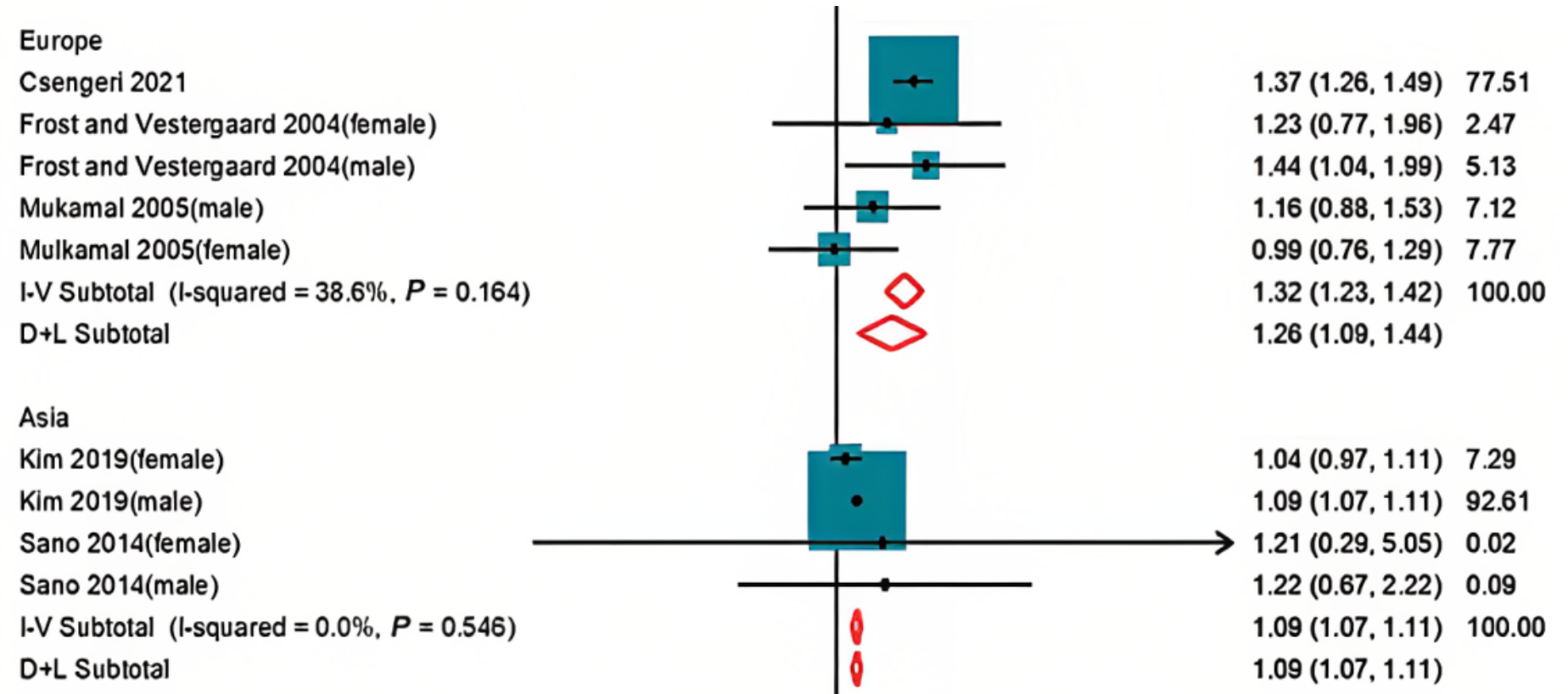


Figure 3: Risk of incident AF with low to moderate alcohol consumption in people from different regions

Moderate spirit, beer and mixed alcohol consumption increased the risk of AF.

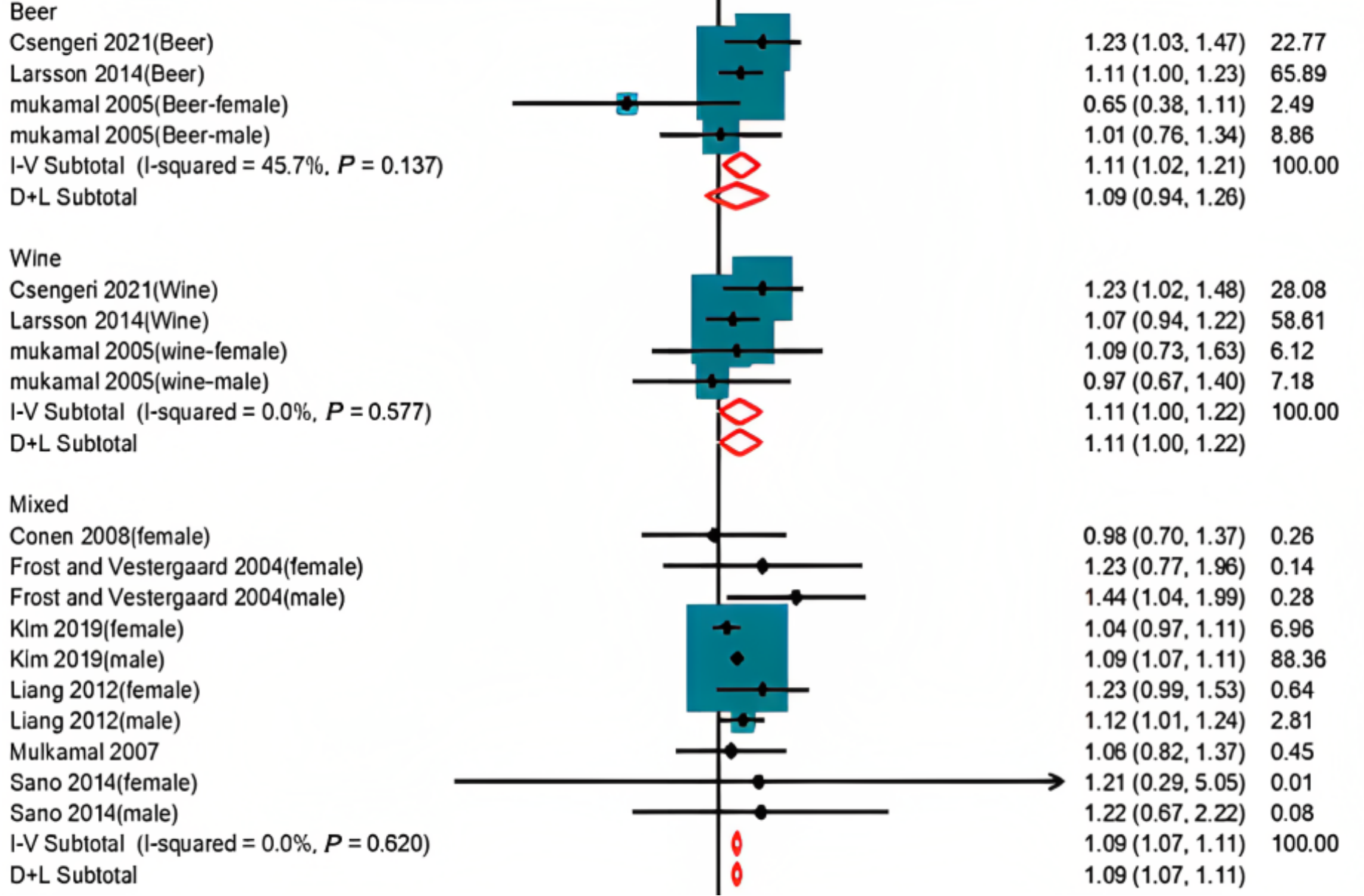


Figure 4: Risk of incident AF with different alcoholic beverages

4. CONCLUSIONS

Both low and moderate alcohol consumption conferred an increased risk of AF in males but not females. Moderate beer consumption is associated with a confirmed risk of developing AF. Those who drink any preferred alcohol beverage at moderate levels should be cautious for incident AF. Asians are seemingly more susceptible to incident AF with moderate alcohol consumption, and Europeans are more susceptible to incident AF with either moderate or low alcohol consumption.

5. FORTHCOMING RESEARCH

- Mendelian randomization studies focusing on different subgroups may help investigate the causal role of alcohol in incident AF.
- Identification of modifiable factors is of great importance for the management of AF.