Clinical Epidemiology

Lab 2

Lina Wang

Department of Epidemiology and Biostatistics
School of Public Health
Southeast University
Phone: 025-83272569 (o)
E-mail: linawang626@hotmail.com

Read the following and select the best response (review for the case-control study and cohort study)

1. In a case-control study of oral contraceptives and myocardial infarction (heart attact), exposure to birth control pills was abstracted from medical records at the time of the myocardial infarction. Results might be biased toward finding an association by all of the following except:

A: Physicians might have asked about use of birth control pill use more carefully in cases.

B: Having a myocardial infarction might have led to oral contraceptive use.

C: Physicians might have been more likely to record birth control use in cases.

D: Medical record abstractors might have looked for evidence of oral contraceptive use more carefully if they knew a patient had had a myocardial infarction.

E: Patients might have recalled exposure more readily when they had a heart attack.

2. Investigators in Europe did a case-control study, nested in a multicounty cohort of more than 520,000 participants, of vitamin D concertation and the risk of colon cancer. They studied 1,248 cases of incident colon cancer arising in the cohort and an equal number of controls, sampled from the same cohort and matched by age, sex, and study center. Vitamin D was measured in blood samples taken years before diagnosis. Vitamin D levels were lower in patients with colon cancer, independent of a rich array of potentially confounding variables. The study results could be described by any of the following except:

A. Vitamin D levels were associated with colorectal cancer.

B. Vitamin D deficiency was a risk factor for colorectal cancer.

C. Nesting the study in a large cohort was a strength of the study.

D. The results might have been confounded with unmeasured variables related to vitamin D levels and colorectal cancer.

E. Vitamin D deficiency was a cause of colorectal cancer

3. Which of the following is the most direct result of a case-control study?

A. Prevalence

B. Risk difference

C. Relative risk

D. Incidence

E. Odds ration

4. The epidemic curve for an acute infectious disease describes:

A. The usual incubation period for the causal agent

B. A comparison of illness over time in exposed versus non-exposed people

C. The onset of illness in cases over time

D. The duration of illness, on average, in affected individuals

E. The distribution of time from infection to first symptoms

5.Which of the following is the best reason for doing a case-control analysis of a cohort study?

A. Case-control studies are a feasible way of controlling for confounders not found in the cohort dataset.

B. Case-control studies can provide all the same information more easily.

C. Case-control studies can determine incidence of disease in exposed and non-exposed, members of the cohort.

D. Case-control studies are in general stronger than cohort studies.

6. The best way to identify cases is to obtain them from:

A: A sample from the general (dynamic) population

B: Primary care physicians' offices

C: A community

D: A cohort representative of the population

E: A hospital

7.What is the best reason to include multiple control group in a case-control study?

A. To obtain a stronger estimate of relative risk

B. There are a limited number of cases and an ample number of potential controls

C. To control for confounding

D. To increase the generalizability of the result

E. The main control group may be systematically different from cases(Other than on the exposure of interest)

8.Case-control studies can be used to study all of the following except:

A. The early symptoms of stomach cancer

B. Risk factors for sudden infant death syndrome

C. The incidence of suicide in the adult population

D. The protective effect of aspirin

E. Modes of transmission of an infectious disease

9.In a case-control study of exercise and sudden cardiac death, matching would be useful:

A. To control for all potential confounding variable in the study

B. To make cases and controls similar to each other with respect to a few major characteristics

C. To make it possible to examine the effects of the matched variables on estimated relative risk.

D. To test whether the right controls were chosen for the cases in the study.

E. To increase the generalizability of the study.

10. In a case-control study of whether prolonged air travel is a risk factor for venous thromboembolism, 60 out of 100 cases and 40 out of 100 controls had prolonged air travel. What was the crude odds ratio from this study?

A. 0.44

B. 1.5

C. 2.25

D. 3.0

E. Not possible to calculate

11.A population-base case-control study would be especially useful for studying:

A. The population attributable risk of disease

B. Multiple outcomes (disease)

C. The incidence of rare diseases

D. The prevalence of disease

E. Risk factors for disease

12. Case-control studies would be useful for answering all of the following questions except:

A. Do cholesterol-lowering drugs prevent coronary heart disease?

B. Are complications more common with fiberoptic cholecystectomy than with conventional (open) surgery?

C. Is drinking alcohol a risk factor for breast cancer?

D. How often do complications occur after fiberoptic cholecystectomy?

E. How effective are antibiotics for otitis media?

13. Which of the following statements is not correct for both prospective and retrospective cohort studies?

A. They measure incidence of disease directly.

B. They allow assessment of possible associations between exposure and many diseases.

C. They allow investigators to decide beforehand what data to collect.

D. They avoid bias that might occur if measurement of exposure is made after the outcome of interest is known.

Questions 14-16 are based on the following example: A study was done examinging the relationship of smoking, stroke, and age. The 12-year incidence per 1,000 persons (absolute risk) of stroke according to age and smoking status was:

Age	Non-smokers	Smokers
45-49	7.4	29.7
65-69	80.2	110.4

14. What was the relative risk of stroke of smokers compared to non-smokers in their 40s?

A. 1.4

B. 4.0

C. 22.3

D. 30.2

E. 72.8

F. 80.7

15. What was the attributable risk per 1,000 people of stroke among smokers compared to non-smokers in their 60s?

A. 1.4

B. 4.0

C. 22.3

D. 30.2

E. 72.8

F. 80.7

16.Which of the following statements about the study results is incorrect?

A. To calculate population-attributable risk of smoking among people in their 60s, additional data are needed.

B. More cases of stroke due to smoking occurred in people in their 60s than in their 40s.

C. When relative risk is calculated, the results reflect information about the incidence in exposed and unexposed persons, whereas the results for attributable risk do not.

D. The calculated relative risk is a stronger argument for smoking as cause of stroke for persons in their 40s than the calculated risk for persons in their 60s.

E. Depending on the question asked, age could be considered either a confounding variable or an effect modifier in the study.

17. In a study to determine if regularly taking aspirin prevents cardiovascular death, aspirin users died as often as non-users. However, aspirin users were sicker and had illnesses more likely to be treated with aspirin. Which of the following methods is the best way to account for the propensity of people to take aspirin?

A. Calculate the absolute risk of cardiovascular death in the two groups and the risk difference attributable to using aspirin.

B. Create subgroups of aspirin users and non-users with similar indications for using the medication and compare death rates among the subgroups.

C. For each person using aspirin, match a non-user on age, sex, and comorbidity and compare death rates in the two groups.