

HANDS ON COHORT/ CASE CONTROL STUDY

COHORT STUDIES

- Big sample of population who already get a treatment or a certain exposure and another group without the treatment or exposure and follow them forward over time. Compare the outcomes.
- (-) Subject to bias, two groups can differ in other ways than the variable studied.

COHORT STUDY: APPRAISAL CRITERIA

- Patients similar for prognostic factors known to be associated with the outcome?
- Similar circumstances and methods to detect the outcomes?
- RELATIVE RISK: $\frac{\text{Risk outcome in exposed group}}{\text{Risk outcome in unexposed group}}$

CASE CONTROL STUDIES

- Possibility of large sample. Look back, often in medical records, for patients who already have a condition and compare with others who do not have the exposure. Useful to easily get large samples, look at rare outcomes, etc.
- (-) Subject to bias, can show statistical relation between two unrelated factors.

CASE CONTROL STUDY : APPRAISAL CRITERIA

- Cases and control similar to circumstances that can lead to exposure? (same opportunity to exposure to harm)
- Similar circumstances and methods to determine exposure?
- ODDS RATIO:
$$\frac{\text{Odds of exposure in patients with outcome}}{\text{Odds of exposure in patients without outcome}}$$

VIDEO

COHORT STUDY

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ORIGINAL ARTICLE

Surgical Site Infection After Primary Hip and Knee Arthroplasty: A Cohort Study Using a Hospital Database

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BACKGROUND. Hip or knee arthroplasty infection (HKAI) leads to heavy medical consequences even if rare.

GOAL OF THIS STUDY

- Read it 3 times
- Still not sure

WHERE THERE CLEARLY DEFINED GROUPS OF PATIENTS SIMILAR IN ALL IMPORTANT WAYS OTHER THEN THE EXPOSURE OF INTEREST?

encrypted anonymized number. We extracted the 32,678 patients who underwent primary knee or hip arthroplasty during the selection period (Online Appendix). Patients younger than 18 were excluded (8 patients). Follow-up started at the first

A historic cohort study was performed using 1 French regional hospital discharge database 2008–2012, corresponding to all hospital stays from residents of this region (Région Centre, 2.5 million inhabitants, 38 private and public hospitals). Patients were selected by the presence in the hospital discharge, from January 1, 2008, through December 31, 2011, of a surgical hip or knee arthroplasty procedure according to the French Common

WHERE THE GROUPS SIMILAR AT THE START OF THE STUDY EXCEPT FOR EXPOSURE?

A historic cohort study was performed using 1 French regional hospital discharge database 2008–2012, corresponding to all hospital stays from residents of this region (Région Centre, 2.5 million inhabitants, 38 private and public hospitals). Patients were selected by the presence in the hospital discharge, from January 1, 2008, through December 31, 2011, of a surgical hip or knee arthroplasty procedure according to the French Common

survival. All possible explanatory variables were first tested in a univariate model (Appendix). The criterion for inclusion in the multivariate analysis was $P < .2$ in the univariate analysis. Joint location, age, and sex were always included. Cox proportional hazards models were used to determine the effects of

IF NO, ARE THEY DELT WITH?

Ulcer sore							
No	31,558	1.68	NA	1	Reference		NA
Yes	1,120	6.61	<.001	2.55	1.94	3.35	<.001
Tobacco							
No	32,270	1.83	NA	1	Reference		NA
Yes	468	3.0	.06	–			
Hypertension							
No	20,051	1.70	NA	1	Reference		NA
Yes	12,627	2.10	.14	–	–		
Cardiologic device							
No	31,789	1.81	NA	1	Reference		NA
Yes	889	3.26	.03	1.13	0.77	1.65	.55
Chronic renal failure							
No	31,789	1.76	NA	1	Reference		NA
Yes	889	5.29	<.001	1.53	1.11	2.10	.01
Urinary tract disorders							
No	30,996	1.69	NA	1	Reference		NA
Yes	1,682	4.82	<.001	1.85	1.44	2.39	<.001

WHERE RESEARCHERS BLIND TO EXPOSURE STATUS



WHERE EXPOSURES AND OUTCOMES MEASURED THE SAME WAY IN BOTH GROUPS.

18 were excluded (8 patients). Follow-up started at the first hospital stay when the procedure was performed (admission day) and continued until the end of 2012. Patients were not recalled for this study but followed up through their consecutive hospital stays and discharges, regardless of the location of admission in France, either inside or outside the region. The minimum target time of follow-up was 12 months (inclusion up to December 2011 and follow-up until December 2012).

FOLLOW UP LONG ENOUGH ?

admission in France, either inside or outside the region. The minimum target time of follow-up was 12 months (inclusion up to December 2011 and follow-up until December 2012).

LOST TO FOLLOW UP

discharge databases. However, only 10 patients were lost to follow-up directly after the arthroplasty hospital stay. This bias of “lost to follow-up” was then minimized. Concurrent events

CASE –CONTROL STUDY



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Original Contribution

A Case-Control Study of Long-Term Exposure to Ambient Volatile Organic Compounds and Lung Cancer in Toronto, Ontario, Canada

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GOAL OF THIS STUDY

Few studies have investigated associations between nonoccupational exposure to ambient volatile organic compounds and lung cancer. We conducted a case-control study of 445 incident lung cancers and 948 controls (523 hospital, 425 general population) in Toronto, Ontario, Canada, between 1997 and 2002. Participants provided in-

DID CASES AND CONTROLS HAVE SAME CHANCES OF EXPOSURES

tobacco-related etiology. All never smokers whose cancers were diagnosed at one of the participating oncology clinics were invited to participate in the study following completion of the screening questionnaire, which determined lifetime

Two control series were assembled. The first was population-based, with individuals randomly selected from property tax assessment files. The other was created from patients who attended the Mount Sinai Hospital Family Medicine Clinic. This is a nonspecialized family medicine practice

CONTROL GROUP, SAME CRITERIAS

- I GUESS?

EXPOSURES / OUTCOMES MEASURED THE SAME ?

Participants were asked to provide detailed information about their smoking habits, which included their current smoking status, number of years of smoking, and the average amount they had smoked daily during their lifetime. From

RESEARCHERS BLINDED?

dures that were consistent for all participant groups. Never-smoking cases were also informed of the desired oversampling and were encouraged to participate based on the relative rarity of the etiology of their cancer in comparison with smokers. Ap-

FOLLOW UP LONG ENOUGH ?

- Retrospective study of 10 years
- Is 10 years long enough to show incidence of lung cancer?