

Directed Acyclic Graphs Group works

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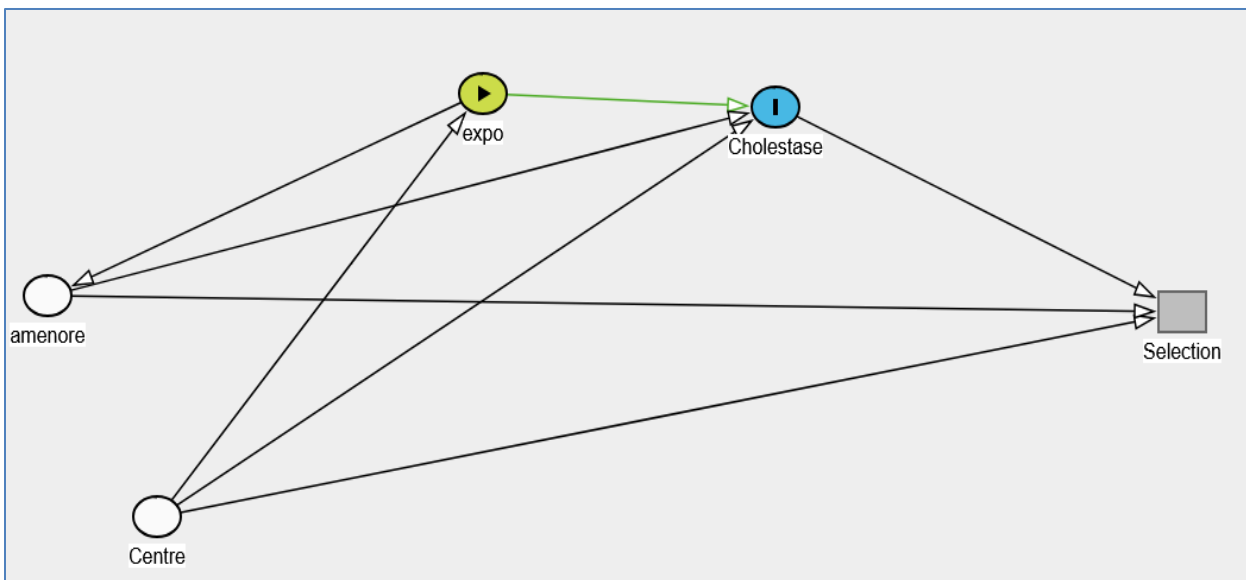
Atelier Inserm
Best practices and recent advances in causal analyses
Practical phase

October 13-16, 2025 - Poitiers

Julien Asselineau

- Association of intrahepatic cholestasis of pregnancy and chronic placental inflammation, reflect of the allograft rejection of pregnancy
- Study design
 - Case-control study paired on gestational age and study center
- Outcome variable
 - Intrahepatic cholestasis of pregnancy
- Exposure variable
 - chronic placental inflammation
- Potential confounders
 - Gestational age

Julien



☑ Causal effect identification

Adjustment (causal odds ratio) ▾

Exposure: expo

Outcome: Cholestase

Selected: Selection

Adjusted: Centre, amenore

Incorrectly adjusted.

☑ Testable implications

The model implies the following conditional independences:

- Selection \perp expo | Centre, Cholestase, amenore

```
dag {
  Centre [adjusted,pos="-1.097,-1.342"]
  Cholestase [outcome,pos="-1.085,-1.344"]
  Selection [selected,pos="-1.077,-1.343"]
  amenore [adjusted,pos="-1.099,-1.343"]
  expo [exposure,pos="-1.091,-1.344"]
  Centre -> Cholestase
  Centre -> Selection
  Centre -> expo
  Cholestase -> Selection
  amenore -> Cholestase
  amenore -> Selection
  expo -> Cholestase
  expo -> amenore
}
```

Nathalie Costet

- Cohort study from general population, environmental epidemiology (PELAGIE or TIMOUN)
- Outcome
 - BMI z-score or Blood pressure at 12 years of age.
- Exposure
 - Prenatal exposure (cord blood concentration) to one (several) pollutant (chlordecone, PCBs ...).
 - Postnatal exposure also available at times between birth and 12 years.
- Potential confounders
 - Socio-economic characteristics, maternal BMI, weight gain during pregnancy, diabetes, child dietary habits.
- Questions
 - BMI as a mediator for the BP
 - How to consider the socio-economic context (predicts exposure, self-selected sample from the general population)
 - How to consider postnatal exposures ?

Lisa Le Gall

- Emulation trial from observationnal data
- Population
 - Patients (re)initiating dialysis after kidney transplant failure
- Exposure
 - Immunosuppression strategy
- Outcome
 - Second renal transplantation
- Necessary condition for the event of interest
 - To be listed on the waiting in list