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ETIOSARC
Etiologie des sarcomes

Occupations and industries at risk for sarcomas: Preliminary analyses in the ETIOSARC Study

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Introduction

Sarcomas

- Rare tumours of connective tissues (<1% of adult cancers)
- Multiple histological subtypes (>80 subtypes)
- Heterogeneous data in incidence trends

Scientific knowledge about environmental aetiology *(Edwards 2021, Inserm 2021)*

- **Identified risk factors**
  - Ionizing radiations
  - Vinyl chloride
  - Dioxins (high doses)
- **Suspected risk factors**
  - Dioxins (low doses)
  - Pesticides (chlorophenols, phenoxyherbicides)
- **Suspected occupations and industries**
  - Agriculture *(Balarajan 1984)*
  - Gardeners *(Hansen 2007)*
  - Forestry workers *(Merletti 2006)*
  - Construction workers *(Wingren 1990, Merletti 2006)*
  - Chemical industrys *(Lynge 1985, Sathiakumar 1992)*

Main limits in the currents studies

- Methodological biases in the diagnosis of sarcomas
- Low statistical power

Objective

To estimate the associations between occupations and industries and the occurrence of sarcomas in ETIOSARC

Methods

Population

- **Cases (Ca)**
  - Incident patients diagnosis with a first histologically confirmed sarcoma since 2019
  - Between 18 and 80 years old
  - Residents of one of the 6 study geographical areas
- **Controls (Co)**
  - 1 or 2 controls per case randomly selected from electoral rolls
  - Individually matched by sex, age (5 years group) and districts of residence

Occupations and Industries

- **Exposition definition**
  - We considered a exposed subject when a subject have frequented the occupation or industry with a duration of more than 6 months
- **Job classifications used for coding**
  - Occupations: International Standard Classification of Occupations (ISCO 2008)
  - Industries: French Nomenclature of Activities (NAF 2008)

Statistical analysis

- Conditional logistic adjusted on education level with OR and 95% CI
- Cases and controls investigated without missing data
- Results are given when the number of exposed subjects are >10 and p-value is < 0,20

Results

375 cases / 704 controls

- Men: 50%
- Median age: 61 years old
- Education level higher among cases

Table 1: Description of education level of cases and controls

Education level	Cases n (%)	Controls n (%)
Primary	19 (5.1)	22 (3.1)
Secondary	155 (41.3)	233 (33.1)
Higher	201 (53.6)	449 (63.8)

Positive associations with sarcoma (Figure 1 and 2)

- **Occupations**
  - Painters: OR=3.33 [1.01-10.94]
  - Agricultural labourers: OR=2.81 [1.15-6.89]
  - Medical doctors: OR=2.72 [1.09-6.80]
  - Secretaries: OR=2.19 [1.15-4.16]
- **Industry**
  - Advertising: OR= 3.14 [1.01-9.79]

Negative associations with sarcoma (Data not shown)

- **Occupations**
  - Market gardeners and crop growers: OR=0.36 [0.14-0.97]
  - Mixed crop and animal producers: OR=0.27 [0.09-0.87]
- **Industry**
  - Combined crop and livestock farming:OR= 0.30 [0.10-0.95]

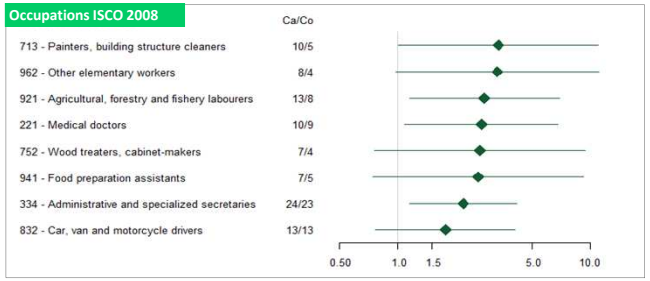

Figure 1: Association between occupations and sarcoma adjusted for education level

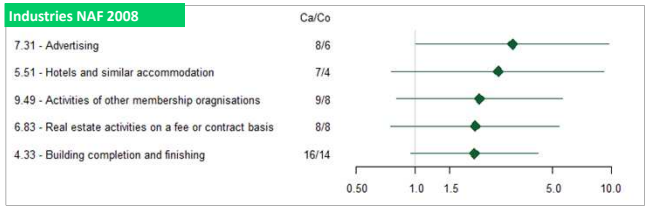

Figure 2: Association between industries and sarcoma adjusted for education level

Conclusion

- First preliminary results in ETIOSARC about occupations and industries
  - New associations not founded in the current literature
  - Heterogeneous associations regarding the agricultural occupations requiring further investigations

Perspectives

- To conduct analyses with the full size sample to confirm our preliminary results
- To analyse the associations between occupational and major histological groups
- To take into account the length of employment and a latency period
- To cross occupations and industries to better characterize a potential exposition

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