PARKINSON’S DISEASE IN AGRICULTURAL ENVIRONMENT

Recognising pesticides links with Parkinson’s diseases?

CCMSA
Brussels
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Parkinson’s disease

- The most common neurodegenerative disease after Alzheimer’s disease
- An increase in the frequency with the age
  - After 65 years: $1.5% < F < 2%$
- Cumulative risk for the whole life: $1.6%$
- Today: 100,000 sick people in France
- Estimate for 2040: 140,000 concerned people
Parkinson’s disease

- Links with environmental factors are very often pointed out

- Results of studies
  - Links with agricultural environment
  - Links with exposure to pesticides
Toxicological facts

- Parkinson-like symptoms with
  - Mancozeb (acute intoxications)
  - MPTP (similar to paraquat): concerns drug users and chemical engineers

- Animal studies
  - MPTP (similar to paraquat)
  - Rotenone (biological insecticide)
  - Some fungicides: Maneb
Epidemiological facts

- Priyadarshi (2001): meta-analysis of PD
  - 19 case-control studies analysing several factors of risks:
    - Frequent exposure to pesticides: OR 1.85 [1.31-2.60]
    - Living in rural area: OR 1.56 [1.18-2.07]
    - Well water consumption: OR 1.26 [0.97-1.64]

- Overview of 31 studies (1989-2005) about the relation between PD and exposure to pesticides
Case-control study (1998-1999)

- Patients insured by the Mutualité Sociale Agricole (health insurance system of French agricultural populations)
- 247 cases and 676 controls
Results

- Link between PD and farmer’s occupation (OR=1.9, IC 95%=1.3-2.9)
- Link between PD and exposure to pesticides (OR=1.8, IC 95%=1.1-3.3)
- Dose-effect answer (after a 15-year exposure)
Among MSA’s insured population
- 13,000 PD cases

2004 and 2006
- 2 PD cases recognised as occupational illnesses in relation with pesticides
MSA projects and actions

- Specific project about PD
  - A new study called « Partage » about PD

- Other actions
  - A cohort study « Agrican » to analyse the relation between cancer and agricultural occupations
  - Information and training for pesticides users: good practices
  - Phyt’attitude: agricultural toxicovigilance network
• Case-control study (2007-2008) targeting patients insured by MSA

- About 1,200 expected people (420 PD, 840 controls)
Study « Partage »

- Goals
  - Estimating the PD frequency in agricultural environment
  - Looking for PD factors of risk (occupation, chemical exposure…)
  - Searching for increased PD risk associated to agricultural activities
Phyt’attitude

Signalez-nous vos symptômes

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