

## BACKGROUND

- Mycosis fungoides (MF) is a rare peripheral T cell cutaneous lymphoma. It is a slowly progressing T cell lymphoma that originates in the epidermis and dermis and progresses to infiltrating plaques and cutaneous tumors. Although rare, it is the most frequent type of CTCL, representing more than half of all lymphomas that originate in the skin.
- The etiology MF is still unknown. It usually starts as a contact-type dermatitis
- It appears that jobs associated with exposure to certain metals and plastics are at risk jobs.
- Cr(VI) and its salts, aromatic and/or halogenated hydrocarbons, low frequency electromagnetic fields, and silica are all potential occupational risk factors for MF as well as jobs in the petrochemical and pesticide industries.

**Hypothesis:** Some cases of MF are associated with occupational exposure

## STUDY DESIGN

Study type: case-control study

Setting: European multicenter trial (Denmark, Sweden, France, Germany, Italy, Spain) enrolling patients with 7 different rare cancers of which MF was one.

Time period: Patients recruited from 1995 to 1997

Inclusion Criteria:

- Age 35-69
- MF identified according to ICD diagnostic codes or International Classification of Disease for Oncology.
- All diagnoses checked by reference pathologist who used several criteria for confirming MF in one routinely stained biopsy per each case. Cases which did not meet criteria but had some features of MF were called possible cases.

Exclusion Criteria: refusal to participate, lack of availability of pathology, possible MF diagnosis

Randomization: population controls randomly selected from regions of case ascertainment, frequency matched on sex, age, region.

In all countries involved except Spain, controls were obtained from population registries or electoral rolls. In Spain, colon cancer controls from the hospitals that provided the cases were used.

Patient characteristics: Common questionnaires translated into each language were used to assess sociodemographic characteristics, smoking, alcohol consumption, and lifelong occupational history including details, type, exposures, years worked, hours, tasks, job title, and specific nature of work.

Analysis:

- A list of potential occupational risk factors was determined by a group of industrial hygiene specialists, review of bibliographic data and by the authors' publication on MF (aromatic hydrocarbons, chrome, silica, pesticides, low frequency electromagnetic field).
- Trends were analyzed by creating Job Exposure Matrices (JEM) which consists of occupation classification on one axis and whether the exposure occurred in that particular occupation on another axis. All workers with a similar job title and duration are typically assigned similar cumulative exposures.

## THE EVIDENCE

**Table 2: OR for MF in case patients, stratified by gender and adjusted for age, country and number of jobs.**

(Significant 95% CI in parentheses)

		AHs	EM radiation	Silica	Pesticides	Chrome
Men	<i>Unadjusted</i>	<b>6.3</b> (2.4-16.7)	0.9	1.3	0.6	0.4 (0.2-1.0)
	<i>Adjusted</i>	<b>4.6</b> (1.8-11.9)	1.1	1.0	0.4 (0.2-1.2)	<b>0.3</b> (0.1-0.8)
Women	<i>Unadjusted</i>	2.2 (0.8-6.0)	0.6	0	2.3 (0.7-7.4)	1.2
	<i>Adjusted</i>	1.7 (0.2-2.5)	0.7	0	1.2	0.7

**Table 3: OR for MF in case pases, stratified by number of years of exposure and gender, adjusted as above.**

- P < 0.05 for exposure trend for AHs, pesticides, silica, EM radiation, chrome in men; AHs and pesticides in women.
- However, ORa is significant only for exposure to **pesticides > 10 years in men** (ORa 6.8, 95%CI 1.3-35.2) and **AHs > 10 years in women** (ORa 3.4, 95%CI 1.0-11.5)

## COMMENTS

- **Limitations.** European population. Study design: case control vs. cohort. Selection bias. Recall bias for all patients and by selecting colon cancer cases from Spain? Confounding: sun exposure, smoking, et al. Reported exposures vs. generalize by occupation; JEM as surrogate marker. Why not analyze independent of gender?
- Short-term ("any exposure" analysis) exposure to AHs may contribute to MF in men. Increasing exposures to multiple substances over a lifetime **may** increase risk of MF.