Rezumat teza de doctorat

Cutaneous manifestation in workers in non-ferrous metal processing and mining industry. Allergic contact dermatitis.

During my career, about 15 years as a specialist in dermato-venerology at the Hospital of Infectious Diseases, Dermatology and Psychiatry Baia Mare, the country's major mining center, I came across a large number of cases of contact dermatitis in workers in the mines of this area. As the etiology and evolution of these dermatoses is obviously influenced in most cases of environmental and working conditions, I wanted to demonstrate a correlation between the occurrence of this type of skin disease and professional contact with nonferrous metals extracted from the mines of the basin Baia Mare mine.

I chose to expand research with irritant contact dermatitis due to the number of cases encountered, we also investigated the incidence of dermato-mycoses due to this professional group working environment conducive to the development of this type of skin disease. Data from the literature is sporadic in terms of such studies conducted in this professional group in terms of allergic contact dermatitis. Research has been made difficult by the current regional socio-economic conditions, the mining town of Baia Mare stopping its mining activity since 2006, and the medical data was in most cases not preserved in an organized archive.

This is a multicentric and retrospective study that was conducted over a period of five years, between 2000-2004. The first establishment of statistical data research was CMI Dr. Eugenia Pop from Baia Mare, with specialty practice family medicine considered to be representative of the number and structure of patients (3146 patients) to study the incidence of contact dermatitis in the general population of the municipality in which our study was conducted. I studied patients' records, aiming at new cases of contact dermatitis diagnosed as being allergic in nature from an allergy specialist following a consult and specific investigations. There have also been taken into account age, sex, place of work of these patients.

The second site for our statistics was the medical practice at E.M.Herja(a mine), where I studied the medical records for the period in question, for 595 employees from which 560 were underground workers working in toxic conditions and 35 were surface workers not exposed at toxic conditions. We followed the occurrence of contact dermatitis, the treatment followed, the associated pathology and the presence of other skin conditions. In order to differentiate the allergic contact dermatitis from the irritant contact dermatitis we performed patch-testing for nonferrous metals on 73 workers with clinical signs and history of contact dermatitis, on these individuals we also measured the total IgE level in the serum, to assess the atopic terrain. We also performed direct mycological exams as well as inseminations on culture media, on workers with clinical signs of skin micosis.
The third site for our investigation was the medical practice at Flotatia Centrala Baia Mare where the nonferrous ores were chemical and thermally prepared for the extraction of nonferrous metals.

The conclusions:
1. The incidence of CD in the general population of Baia Mare is in the range 9-11%, 5.5 to 6.5% from the total consultations by family medicine cabinet CMI.Dr.Pop Eugenia.
2. In the general population by age group most frequently affected by the active CD is 19-45 years.
3. The statistical analysis of C.M.I. Dr.Pop Eugenia resulting CD predominant occurrence in females, the incidence is 1% higher than occurred in males.
4. Incidence DC in underground employees at E.M. Herja is in the range from 13.03 to 15.53% with an ICD prevail between 10.71 to 13.39% and the proportion diagnosed with ACD type that is 2.14 to 3.57%.
5. Patch testing performed on a group of 73 patients in 2004, with clinically diagnosed CD reveals a total of 13 positive reactions, 46% weak positive reactions, 39% strong positive reactions and 15% very strong positive reactions. Among the reactions other than those positive 92% were irritant reactions, reactions considered doubtful 3%, 5% negative reactions.
6. Among the test subjects patch 0.5% potassium dichromate, cobalt chloride 1% and 5% nickel sulphate, 23% of results were positive for nickel sulfate, 23% were positive for potassium dichromate and sulfate nickel, 23% positive for cobalt chloride and 31% to potassium dichromate.
7. The incidence of atopic pathology in workers in underground at E.M.Herja, reveals higher values that those described in the literature for the general population and the disease is divided as follows: 8-9% allergic asthma, allergic rhinitis and allergic conjunctivitis 21-24%; 14-15%.
8. The incidence of atopic disorders in patients with ACD study reveals significantly elevated compared to those recorded from both underground workers and general population. The values recorded are as follows 22-25% atopic asthma, allergic rhinitis and allergic conjunctivitis 35-39%; 22-25%.
9. The study of skin pathology in underground workers showed a rate of 94.8% of the analyzed, clinical signs of mycosis. Direct mycological examination performed in those with clinical signs of disease reveals an 86% positive results. Direct mycological examination of subjects 90% had positive cultures at seeding on Sabouraud culture medium. From the cultures resulted positive 75.5% positive dermatophyte cultures, dermatophytes +Candida 5.9% and 8.9% Candida.
10. The main species etiological for dermatomycosis in underground workers were 62.7% T. rubrum, T. mentagrophytes 20.4%, 2.1% E. floccosum, T. tonsurans 0.7% and 9.8% Candida.
11. Tinea pedis is the main form of clinical presentation, and the main causative agent is T. rubrum.
12. The clinical candidosis predominant is in 62% interdigital intertrigo.
13. Eritrasma predominant clinical form was in 31% the interdigital feet presentation.
14. The incidence of CD in workers in Flotatia Centrala Baia Mare was determined at 14-16%,
representing 8.41% of all consultations carried out in occupational health office attached to the unit. 3-4% incidence of ACD and the ICD is in the range 11-12%.

15. Atopic pathology in workers at the Flotatia Centrala Baia Mare diagnosed with ACD presents an incidence comparable to those recorded for the miners at E.M.Herja as follows: asthma 21-25%, 29-33% atopic rhinitis, allergic conjunctivitis 21-25%.

16. The main diseases recorded in mining and processing workers in ore mining basin in Baia Mare are punctate silicosis, pulmonary fibrosis, hearing loss and occupational Raynaud's syndrome.