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NUMMULAR ECZEMA—CLINICAL AND STATISTICAL DATA

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Nummular eczema is in the vesicular phase characterized by coin-shaped patches, which are erythematous, oedematous and studded with papulovesicular lesions and crusts. Later, in a stage of involution, the patches are more dry, scaling and thickened and sometimes they are ringshaped and circinate due to central healing. In nummular eczema are not included the coin-shaped eczematous plaques that can be found for example in contact eczema, atopic eczema and in microbides on the trunk associated with a hypostatic eczema.

The name of nummular eczema was first coined by Devergie in 1857 (4). During the last twenty years reports i.a. from Gross in the U.S.A. (6–9), Cowen in England (3), Krogh in Norway (16), Braun-Falco (2) and Röckl and Schröpfl in Germany (18) have made important contributions to the knowledge of this disease.

The aim of the present investigation was to study with statistical methods clinical and laboratory data in nummular eczema with a special consideration of the internal foci of infection. The study is based on the total of 755 patients with a diagnosis of nummular eczema, treated as outpatients at the Department of Dermatology in Gothenburg, Sweden, during 1960–1964. Included are also 131 patients hospitalized in the clinic during the years 1960–1966. If the patient had been examined several times only the first visit to the hospital was taken in consideration. The data are based on hospital records and outpatient registers. The statistical tests used in the comparisons were the Chi-Square test and the Sign test (level of significance: .05, double-sided interval).

A. Clinical Data

Incidence

The incidence of nummular eczema calculated from the outpatient registers at the Department of Dermatology in Gothenburg was 2.6 % for males and 1.2 % for females, in total 1.9 %. Data from the literature are sparce. Krogh, however, reports an incidence of 4.6 % in a hospitalized material from the Department of Dermatology in Bergen, Norway (16).

Prevalence

The prevalence of nummular eczema in total populations in different geographic areas in Sweden was 0.2 % for males and 0.1 % for females, as observed by one of us (13).

Sex distribution

The sex distribution shows a predominance of males in the outpatient registers. In total there were 528 males and 227 females in the outpatient registers, and 93 males and 38 females among the hospitalized. This makes 70 % males and 30 % females, respectively 71 % males and 29 % females (males/females = 2.3 respectively 2.4). This is well in accordance with reports from the literature, for example Cowen (3) and Krogh (16). A few authors have found the

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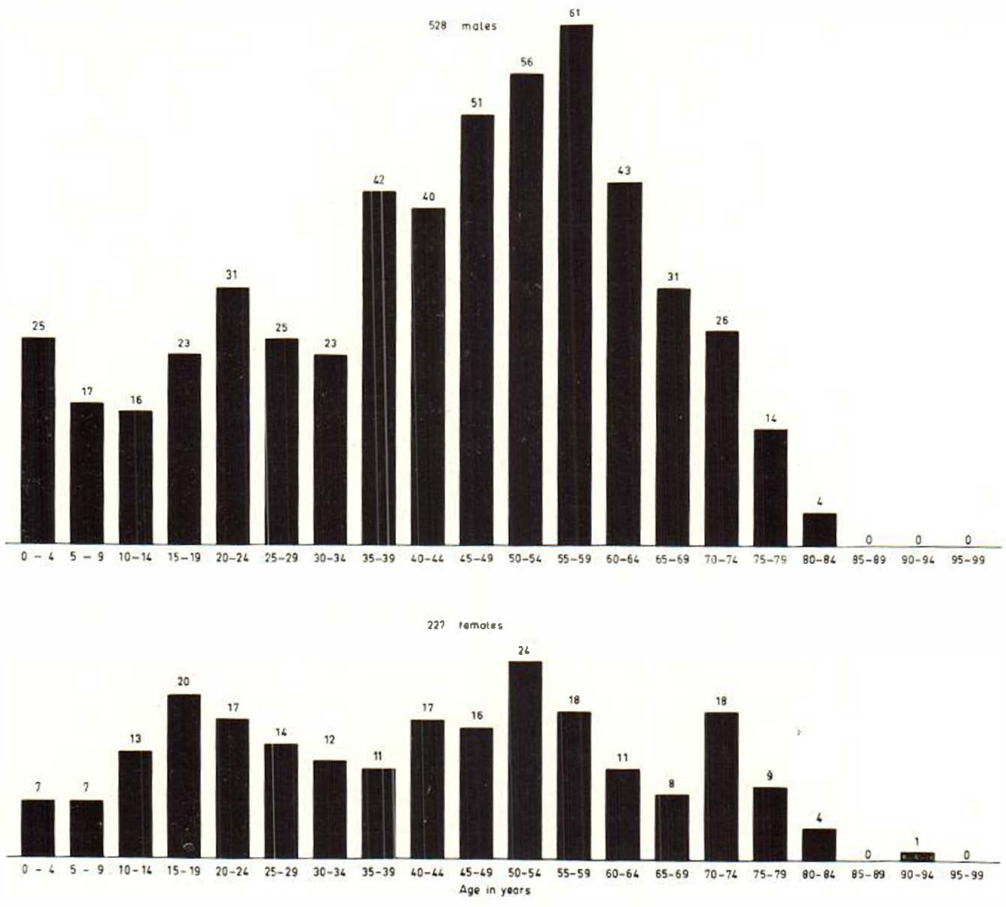

Fig. 1. Frequency distributions of the age at onset in 755 out-patients with nummular eczema.

reverse, i.e. that nummular eczema should be more frequent among females, for example Weidman and Savicky (22), Fowle and Rice (5), Gross *et al.* (8). The explanation of this may be that Gross, for example, also includes dermatitis of the hands of housewives as a variant of nummular eczema and that Fowle and Rice only includes nummular eczema on the hands.

Age distribution

From figures 1 and 2 can be seen, that the most common age of onset for nummular eczema in males is between 35–70 years of age with a maximum in the age group 55–65 years of age. That the onset of the disease often occurs at older age can be explained by the fact that people often have a more dry skin at this age; Gross is of the opinion that there is a pathogenetic association between dry skin and nummular eczema, and that dry skin might predispose to nummular eczema (6). The importance of dry skin is also mentioned by Hagerman (10).

In figures 1 and 2 there is shown a maximum of onset in females corresponding to that in males but they also show a maximum in the age groups 15–25 years. Similar observations have been reported by Vickers (21) and Cowen (3). The reason is not known but possible factors of importance are in this age: emotional stress, hormonal changes and more frequent use of soap and detergents (3).

Occupational distribution

The occupational distribution of the patients with nummular eczema showed that

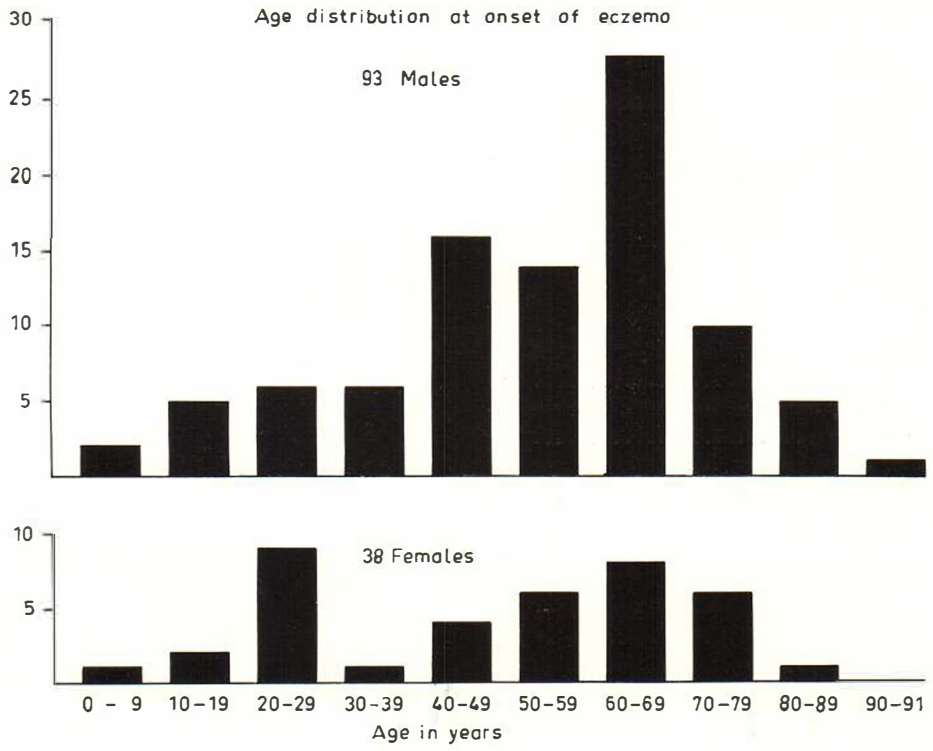

Fig. 2. Frequency distributions of the age at onset in 131 hospitalized patients with nummular eczema.

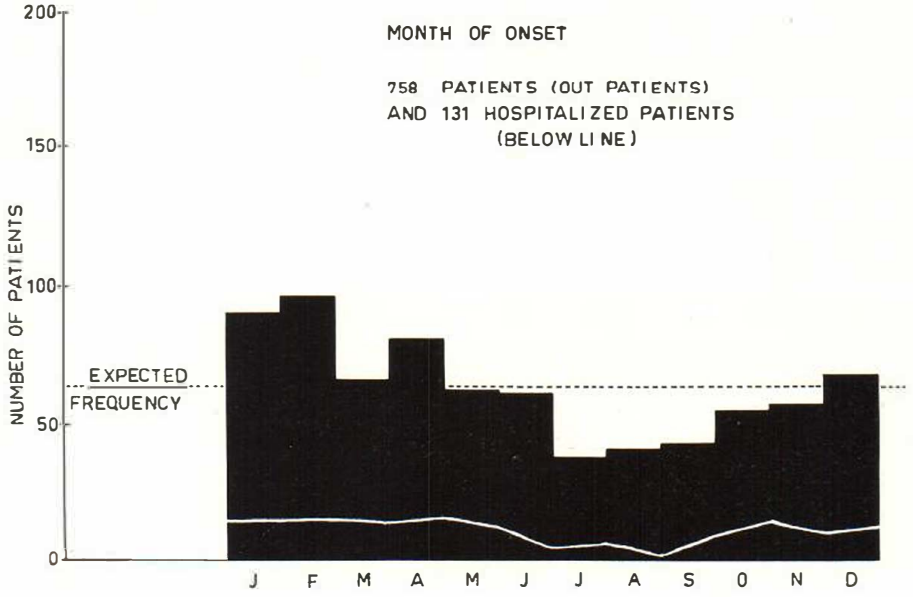

Fig. 3. Seasonal variations.

Table 1. *Incidence of allergic diseases in past histories of 131 patients with nummular eczema and their families*

Type of disease	Number of patients	Patients' families no.
Asthma	11	10
Hay fever	1	2
Urticaria	2	–
Atopic dermatitis	3	4
Number of patients with allergic diseases in the past history		17
Number of patients with allergic diseases in relatives		13
Number of patients with allergic diseases in the past history and in relatives		6

the disease was most frequent among labourers and workmen but it did not significantly differ from the occupational distribution of the City of Gothenburg, i.e. the population from which the patients of the hospital emanated.

Seasonal variations

The seasonal variations in nummular eczema are of interest. Figure 3 shows a comparatively low frequency of onset during July, August and September. From experience it is known that the patients in general feel better in sun and during summer. The deterioration of the disease in winter has been associated with an increased dryness of the skin due to e.g. the hot air from the central heating and washing agents (3, 10). From the hospital records the following data in 131 hospitalized patients with nummular eczema have been extracted.

History of atopy

Among the blood relatives of 13 patients (grandfathers, paternal aunts and uncles, maternal aunts and uncles, brothers and sisters) there was a history of asthmatic bronchitis, allergic rhinitis, urticaria or atopic eczema (Table 1). 14 of the patients had themselves at the time of examination (or had earlier had) asthmatic bronchitis, allergic rhinitis or urticaria. Three of the patients had earlier in life had atopic eczema (a twenty-seven years old woman, in whom the atopic eczema had healed at the age of 13, and at the age of twenty-seven she got a nummular eczema on her legs; a man 36 years old, with eczema on his hands as an infant, asthmatic bronchitis at the age of 12 and nummular eczema since the age of 56; a 28 years old woman with atopic eczema up to the age of 21 and 7 years later nummular eczema on her legs and arms). These observations do not support the hypothesis that nummular eczema should belong to the group of atopic diseases, since in these there is generally a heredity of 70–80 % of atopic eczema, asthmatic bronchitis and allergic rhinitis among the blood relatives of the patients (11 a, 11 b). This is in accordance with reports i.a. from Weidman and Savicky (22), Krogh (16) and Cowen (3).

Incidence of internal disorders

Of the total number of 131 patients with nummular eczema, 63 were healthy, apart from the eczema. The other 68 patients had a total of 80 diagnoses which are shown in table 2. Ethylismus is found to be most frequent but this may partly be explained by the fact that the material is selected (hospitalized patients). Andrews (1) says that "some of the worst cases are

Table 2. *Incidence of internal diseases in 131 hospitalized patients with nummular eczema*

Diagnosis	Number of cases
Healthy apart from eczema	63
Ethylismus chronicus	17
Heart disease, hypertonia	15
Psychoneurosis	12
Asthma, bronchitis chron.	11
Cancer-operation within last 3 years	5
Urolithiasis	4
Anaemia perniciosa	3
Ulcus ventriculi, duodeni	3
Diabetes mellitus	2
Morbus Bechterew	2
Sclerosis diss.	2
Tbc pulm.	1
Arthritis rheumat.	1
Lues latens	1
Arthritis urica	1

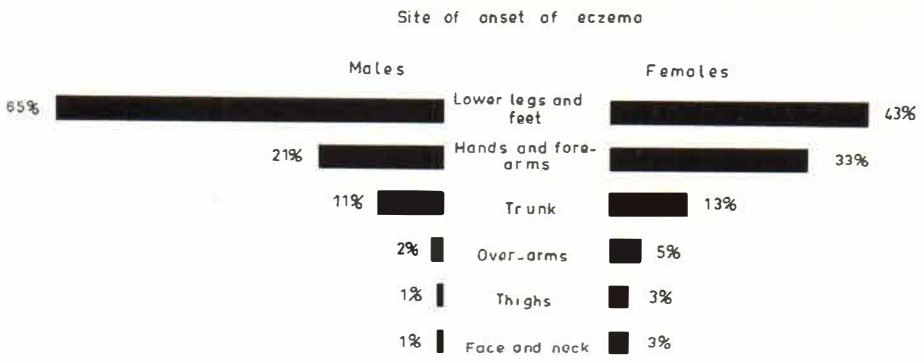

Fig. 4. Site of onset in 131 hospitalized patients with nummular eczema.

seen in alcoholics", which is in accordance with the experiency of most dermatologists.

An association between the acidity of gastric juice (especially hypochlorhydria) and the disposition for ezcema has been discussed by Johansson (15) who in 574 patients with eczema found 387 (67.5 %) with subnormal gastric acidity. This is, however, approximately what is found in surveys of healthy people, especially in an older age, so he does not believe in a true correlation between hypochlorhydria and disposition for eczema. In our material of 131 hospitalized and carefully interrogated patients with nummular eczema, only 6 had gastro-intestinal disorders, i.e. 3 with peptic ulcer and 3 with a pernicious anemia (and achylia), which certainly does not point to a connection between the stomach and eczema.

Localization at onset

There are different opinions on the localization at onset of the nummular eczema in the literature. Thus Cowen (3) and Andrews (1) claim that the onset most often occurs on the back of the hands and forearms, followed by the lower legs. In the present material the onset was most often found on the lower legs and the back of the feet (in 65 % of all males and 43 % of the females). This was followed by the hands, and forearms and the trunk in this order (Fig. 4). Localization of the eczema in the face is very unusual and is not seen unless there is not at the same time nummular eczema on the typical sites of predilection.

Localization at the time of hospitalization

The localization of the skin lesions at the time of hospitalization is shown in figure 5. The ranking order is exactly the same for males and females and also here the most frequent site is on the lower legs, followed by the forearms, thighs, back and upper arms (Fig. 5). The fact that a common frequent localization of nummular eczema is on the ventral aspect of the lower legs in elderly patients has by Hagerman (10) been claimed to be due to the fact that the sebaceous glands here first stop their function so the skin will early be dry and in lack of fat.

B. Laboratory Data

I. *Haematological data*

In about 40 patients with nummular eczema and the same number of healthy matched controls of the same sex, age and time of examination we compared the red and white blood cells, the erythrocyte sedimentation rate and the protein fractions in serum determined with paper electrophoretic methods. No significant differences between the patients with nummular eczema and the matched healthy controls were found as regards haemoglobin concentration, red blood count, total white blood count, neutrophilic leucocytes, eosinophilic leucocytes, monocytes, lymphocytes,

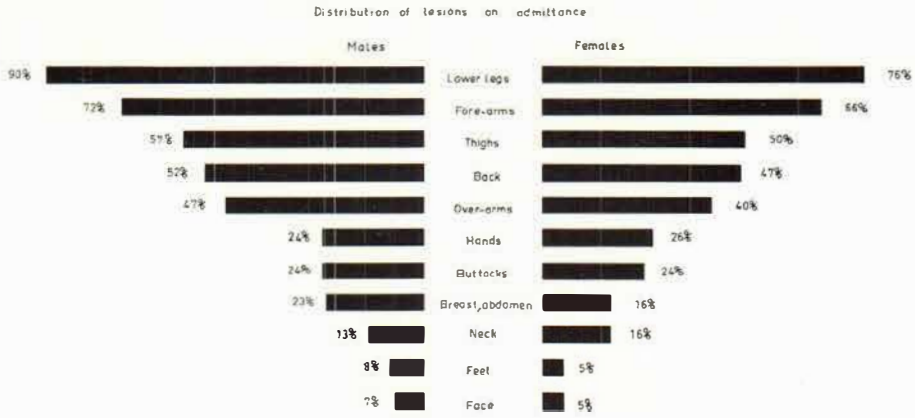

Fig. 5. Distribution of skin lesions on admittance to the hospital in 131 hospitalized patients with nummular eczema.

Table 3. *Antistreptolysin titres in 64 patients with nummular eczema, 19 healthy controls and in 145 psoriatics*

Titres	Male	Female	Male + Female	Healthy controls	Chi-square test	Psoriasis
Normal	31	12	43	18	Signifi-	76
≥400	14	7	21	1	cant	69
	45	19	64	19		145

Table 4. *Antistaphylolysin titres in 64 patients with nummular eczema and in 147 psoriatics*

Titres	Male	Female	Male + Female	Psoriasis	Chi-square test
Normal	44	18	62	140	Not sig-
≥4	1	1	2	7	nificant
	45	19	64	147	

erythrocyte sedimentation rate and serum protein fractions.

Antistreptolysin titre (ASL) was determined in 64 patients. 21 of these had an antistreptolysin titre higher than 250, which is considered to be the upper limit for normal values. The antistreptolysin titre was more often elevated in patients with nummular eczema than in healthy matched controls (Table 3). The patients with nummular eczema had significantly lower frequency of increased ASL than a group of psoriatics.

Antistaphylolysin titre was determined in 64 patients, 2 of whom had an elevated titre (4 units or more). The antistaphylolysin titre was not significantly higher in patients with nummular eczema than in patients with psoriasis (Table 4).

II. *Radiological examinations*

Infectious foci have been proposed as a factor of importance in the pathogenesis of nummular eczema. Schoch (17) and Sutton (20) recommended that sulphonamide treatment should be instituted, the

tonsils should be removed and that dental, vaginal and sinus foci should be eliminated. Sperber (19) considers that nummular eczema is caused by microbial sensitivity, especially to staphylococci, and considers that the most frequent foci are in the teeth, tonsils, accessory nasal sinuses, bronchi, gall bladder, gastrointestinal tract, prostate, cervix, bladder and kidneys.

In a number of patients with nummular eczema radiological examinations of the chest, accessory nasal sinuses and teeth were performed in the search for possible foci of pathogenetic importance. Due to the fact that psoriasis as well as chronic urticaria are considered to be associated with infectious foci (12, 14) it was of interest to compare the results of x-ray examinations in patients with nummular eczema with the results in the other two diseases.

Chest. In 68 patients with nummular eczema a routine physical and radiological examination of the chest was made and more or less extensive bronchiectasies and bronchopneumonic lesions were noted in 7 patients (10 %). Two cases had pulmonary tuberculosis. In comparison with chronic urticaria and psoriasis the differences were not significant.

Accessory nasal sinuses. In 44 patients with nummular eczema routine radiological examinations were performed and in 4 of them infections in the maxillary sinuses were found. None of these 4 patients had any symptoms of sinusitis. In chronic urticaria there was a significantly higher frequency of active sinus infections but compared to psoriasis no significant differences were found.

Teeth. Among 36 patients with nummular eczema root abscesses of the molar teeth and advanced paradental infections were found in 16 (44 %). The frequency in comparison to psoriasis was significantly higher, but compared to chronic urticaria there were no differences.

SUMMARY

Among 755 patients with nummular eczema, 131 had been hospitalized and treated at the Department of Dermatology in Gothenburg during the period 1960–1966. These were studied and compared with apparently healthy controls matched as to number, age and sex.

1. *Incidence:* 1.9 %. 2. *Sex distribution:* 70 % males, 30 % females in the outpatient group. 3. *Age distribution:* A maximum of onsets for males between 55–65 years of age; females: one maximum 15–25 years and another corresponding to that of the males. 4. *Occupational distribution:* No definite differences between occupational groups. 5. *Seasonal variations:* A low frequency of onsets during July, August and September. 6. *History of atopy:* In the hospitalized group, 13 of 131 patients had asthmatic bronchitis, allergic rhinitis, urticaria or atopic eczema among their blood relatives. The results did not support the hypothesis that nummular eczema should belong to the group of atopic diseases. 7. *Incidence of internal disorders:* In the hospitalized group, 68 of 131 patients had 80 diagnoses of internal disorders. Ethylismus, cardiovascular diseases, psychoneurosis and chronic bronchitis dominated. 8. *Localization at onset:* The onset was most often found on the lower legs and the back of the feet, in 65 % of the males and in 43 % of the females. 9. *Localization at the time of hospitalization:* The most frequent sites of lesions were in the following order: lower legs, forearms, thighs, back and upper arms. 10. *Laboratory tests:* No differences were demonstrable between some 40 patients with nummular eczema and matched controls as regards haemoglobin, red blood count, erythrocyte sedimentation rate, white blood count, neutrophilic leucocytes, eosinophilic leucocytes, monocytes, lymphocytes, total serum protein, albumin, alfa$_1$-globulin, alfa$_2$-globulin, beta-globulin, gamma-globulin. There were a significantly higher number of elevated antistreptolysin titres in patients with nummular eczema than among controls. 11. *Roentgenographic examinations:* In patients with nummular eczema there were a significantly higher number of dental abscesses and paradental diseases than in a matched group of psoriatics.

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