

## Postherpetic neuralgia

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**SUMMARY.** Postherpetic neuralgia was studied in a general-practice population (3,600–3,800) for 26 years, 1947–1972. Postherpetic neuralgia followed 46 (14·3 per cent) of the 321 cases of zoster. No neuralgia occurred after zoster in those under 30 years old. The incidence was strongly associated with age, the highest, 34·4 per cent of the zosterers, being in people over 80 years old.

Women, especially between 50 and 69 years old, suffered more zoster than men, and women with zoster suffered more postherpetic neuralgia.

The incidence of neuralgia was not affected by the anatomical location of the zoster. The duration of neuralgia was unrelated to the age of the patient. Cranial neuralgias lasted much longer on average than neuralgia in other sites. Lumbar and sacral neuralgia were short-lived.

### Introduction

This paper describes a retrospective investigation into the incidence and distribution of postherpetic neuralgia in a general-practice population varying between 3,600 and 3,800 people during the 26 years from 1947 until 1972.

Postherpetic neuralgia was diagnosed if pain continued to be reported to the doctor for a month or more after the onset of the zoster eruption. The duration of the pain was also analysed, but no attempt was made to assess its severity.

### Results

#### *General*

Zoster occurred 321 times, an incidence of 3·4 per thousand of the population annually. Postherpetic neuralgia occurred in 46 people (14·5 per cent), a rate of 0·49 per thousand of the population a year.

TABLE 1 POSTHERPETIC NEURALGIA 1947–1962 (26 YEARS)

<i>Age group</i>	<i>Population</i>	<i>Zoster</i>	<i>Annual Rate/1,000</i>	<i>Neuralgia</i>	<i>Annual Rate/1,000</i>	<i>Percentage of Zoster cases causing neuralgia</i>
0–9	534	11	0·8	0	—	—
10–19	471	19	1·6	0	—	—
20–29	428	23	2·1	0	—	—
30–39	454	23	2·0	1	0·1	4·3
40–49	486	30	2·4	1	0·1	3·3
50–59	464	68	5·6	5	0·4	7·4
60–69	374	66	6·8	14	1·4	21·2
70–79	263	49	7·2	14	2·1	28·6
80+	112	32	11·0	11	3·8	34·4
<b>Total</b>	<b>3,586</b>	<b>321</b>	<b>3·4</b>	<b>46</b>	<b>0·49</b>	<b>14·3</b>

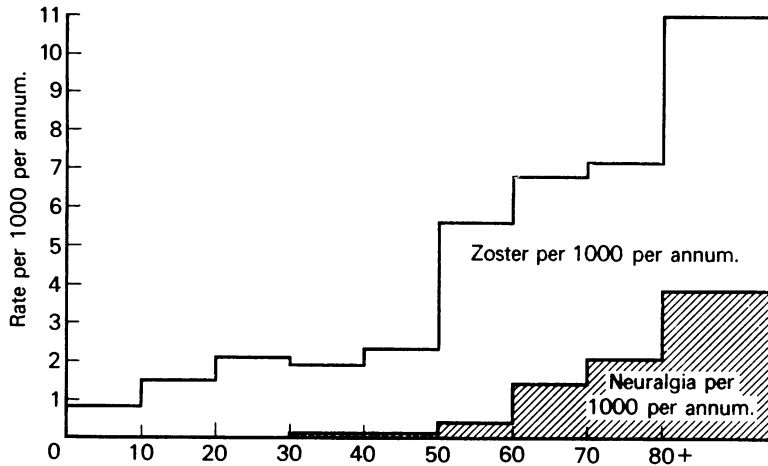


Figure 1  
Zoster—postherpetic neuralgia and age of patient.

*Age*

No case of postherpetic neuralgia occurred under the age of 30 years and the condition was not common under the age of 60. In people over 60 years old, the incidence rose rapidly with age until more than one third of zoster patients over 80 years old were afflicted with neuralgia. The duration of the neuralgia, however, was independent of the patient's age (figure 2)

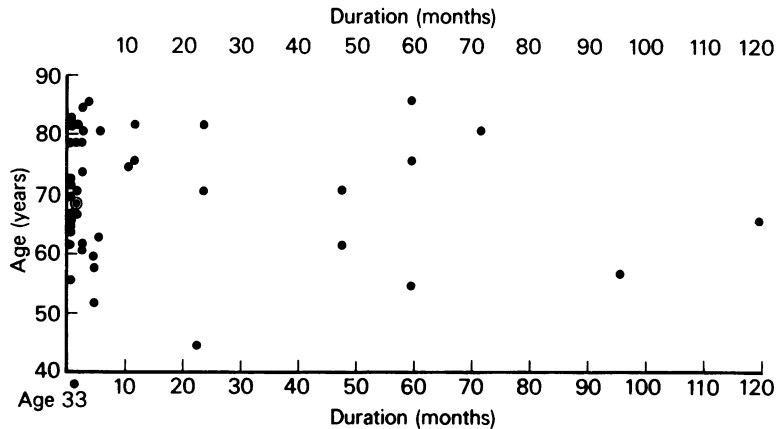


Figure 2  
Duration of postherpetic neuralgia by age of patient.

*Sex*

Zoster was commoner in women, 55 per cent against 45 per cent in men. Age specific analysis shows that this incidence is only in part attributable to the longevity of women, ensuring that more women live into the periods of highest zoster incidence. Men aged 50 to 70 years suffered less than the expected amount of zoster, whereas women in this age group, especially those in the decade 50–59 years, suffered nearly 30 per cent more zoster than expected.

Women also suffered postherpetic neuralgia more commonly than men—65 per cent of the cases occurring in women. This exceeds the expectations from the greater female incidence of zoster and is not explicable solely by the age composition of the women affected with zoster. There was thus a real sex difference in incidence both of zoster and of neuralgia.

TABLE 2A POSTHERPETIC NEURALGIA BY AGE-GROUP AND SEX

Age group	% of Zoster with neuralgia	Males			Females		
		Zoster	Neuralgia		Zoster	Neuralgia	
			Expected	Actual		Expected	Actual
0-9	0	4	0	0	7	0	0
10-19	0	10	0	0	9	0	0
20-29	0	8	0	0	15	0	0
30-39	4.4	15	0.6	1	8	0.3	0
40-49	3.3	19	0.6	1	11	0.4	0
50-59	7.4	29	2.1	1	39	2.9	4
60-69	21.2	28	5.9	6	38	8.0	8
70-79	28.6	19	5.4	4	30	8.6	10
80+	34.4	12	4.1	3	30	6.9	8
Total	14.33	144	18.7	16	177	27.1	30
% of total	100	44.9	40.8	34.8	55.1	59.2	65.2

TABLE 2B ZOSTER, EXPECTED AND ACTUAL NUMBERS, BY AGE, AND SEX

Age group years	Rate per 1,000	Population	Males with zoster		Population	Females with zoster	
			Expected	Actual		Expected	Actual
0-9	.8	247	5.2	4	287	6.0	7
10-19	1.6	232	9.9	10	239	10.1	9
20-29	2.0	205	11.4	8	223	12.5	15
30-39	2.0	227	12.0	15	227	12.0	8
40-49	2.4	262	16.1	19	224	13.8	11
50-59	5.6	252	36.4	29	212	30.7	39
60-69	6.8	183	31.7	28	191	33.3	38
70-79	7.2	111	20.8	19	152	28.3	30
80	11.0	46	13.3	12	62	19.0	20
Total	3.40	1,765	152.9	144	1,817	164.3	177
% of total		49.3	47.9	44.9	50.7	52.1	55.1

*Anatomical location*

Zoster is commonest in the cranial and midthoracic segments. The incidence of postherpetic neuralgia in this series declined from about 20 per cent in zoster affecting the head and neck segment to about ten per cent in those of the thoracic and lumbar segments and was lowest, about six per cent, in those of the sacral segments (table 3).

This anatomical distribution of neuralgia is probably unconnected with the anatomical site because, if the expected incidence is corrected for the age of the persons with zoster, there is little difference between the actual and the expected number of cases (table 4).

TABLE 3 POSTHERPETIC NEURALGIA CLASSIFIED BY CEREBROSPINAL LOCATION

<i>Area</i>	<i>Zoster</i>	<i>Neuralgia</i>	<i>Percentage</i>	<i>Average duration (months)</i>
<i>Cranial</i>	45	8	17.8	30.0
<i>Cervical</i>	50	11	22.0	11.9
<i>Thoracic</i>	165	19	11.5	15.8
<i>Lumbar</i>	40	4	10.0	2.0
<i>Sacral</i>	16	1	6.2	1.0
<i>Not stated</i>	6			
<i>Total</i>	321+1*	43	14.3	15.8

\*NOTE: 321 people with zoster of whom one had a simultaneous double attack (cranial and thoracic).

TABLE 4 POSTHERPETIC NEURALGIA BY SITE, CORRECTED FOR AGE

<i>Area</i>	<i>Zoster</i>	<i>Neuralgia</i>	
		<i>Expected</i>	<i>Actual</i>
<i>Cranial</i>	45	8.0	8
<i>Cervical</i>	50	7.7	11
<i>Thoracic</i>	163	22.3	19
<i>Lumbar</i>	39	5.2	4
<i>Sacral</i>	16	2.8	1
<i>Total</i>	313	46.0	43

TABLE 5 DURATION OF POSTHERPETIC NEURALGIA

<i>Duration (months)</i>	<i>Number of cases</i>	<i>Cases per month</i>	<i>Percentage</i>
1-	12	12	26.1
2-	7	7	15.2
3-	7	7	15.2
4-	1	1	2.2
5-	3	3	6.5
6-11	3	0.5	6.5
12-23	3	0.25	6.5
24-120	10	0.1	21.7
<i>Total</i>	46		99.9

#### *Duration of neuralgia*

Zoster is sometimes completely painless. In this series any pain that was present at first had disappeared at the end of a month in all but 14 per cent of the zoster patients. Of those persons whose pain lasted for more than one month, 50 per cent lost it within three months. About two per cent of the zoster patients suffered postherpetic neuralgia lasting five years or more, the longest recorded being for more than ten years.

Neuralgias affecting the cranial segments lasted longest, averaging 30 months duration. Thoracic neuralgias averaged 16 months duration, cervical ones 12 months and those of the lumbar and sacral segments less than two months.

### Discussion

Hodgkin (1966) gives a figure of five per cent for the incidence of neuralgia after zoster in patients in his practice, but there are no details of the criteria. De Moragas and Kierland (1957) record neuralgia lasting for more than a month in 49·6 per cent of 916 cases of zoster attending a clinic. Colding (1969) found 12·3 per cent of 277 cases also from a clinic. Burgoon *et al.* (1957) give a figure of 9·7 per cent from a selected group.

None of those studies is comparable with this one which concerns a whole unselected general-practice population. Bamford and Boundy (1968) in a general-practice study in Australia found 19 cases of neuralgia lasting more than 30 days in 91 zoster cases (21 per cent). The figure rose to 30 per cent in zoster cases in those over 40 years old. Ross working with general practitioners (Ross *et al.*, 1974) questioned patients at intervals ranging from three to 18 months after their attack of zoster. They found that pain persisted for more than a month in 23 of 64 cases (35·9 per cent).

The reason why my figure, 14 per cent, is much smaller may be explained by the different plan of the study. The method used here included only those patients whose neuralgia continued to trouble them sufficiently to make them consult their doctor. The patients in Ross's study were questioned. The difference in the resulting figures suggests that a considerable amount of minor neuralgia may persist one month after an attack of zoster, and that fewer than half of them are of any significance to the patient.

The incidence of neuralgia increased with age even more steeply than that of zoster, a finding supported by most other workers. In this series, only in people over 80 years-old did the incidence exceed 33 per cent of the zoster cases. Few of the neuralgias were protracted and severe.

Unexpectedly, the duration of neuralgia was independent of age. de Moregas and Kierland found that the proportion of zoster patients with neuralgia exceeding one year's duration increased progressively with increasing age. In the few cases of such prolonged duration in my patients there was no indication of a similar trend.

Anatomical site seemed to have some influence on the duration though not on the incidence of neuralgia, cranial neuralgia lasting longer on average than any others.

The sex difference in neuralgias, the proportion of women (especially in the age group 50–70), exceeding that of men, was also found by Ross *et al.* and by Colding (12 men and 22 women).

In conclusion I was surprised that the amount of protracted neuralgia was less than I had expected. Possibly the great distress and frequent complaint to their doctor of those with a severe and protracted case of the disease creates in the mind of the general practitioner a disproportionate impression of its frequency and duration. When it does occur it presents him with an intractable problem.

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