

Chapter 46

Prognosis of Migraines

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Information about the prognosis of migraine is sparse. It is still not clear how often attacks increase or decrease, completely remit, or change in character over the life span. Nor is it clear which genetic or environmental risk factors determine prognosis. Cross-sectional epidemiologic data have provided limited insight into how migraine evolves over time. If migraine sufferers from a representative general population are asked about how their headaches have changed over time, some may have difficulty remembering events of many years ago. Recall errors may vary with the time interval from the first or most recent attack and with the severity of illness. Moreover, possible cohort and period effects, that is, changes in the risk over time, may not be detected.

CROSS-SECTIONAL STUDIES

In a cross-sectional study of young adults (21 to 30 years old), the last-year persistence rate of migraine was defined as the proportion of those meeting lifetime criteria for migraine who reported a migraine attack in the preceding year. In men the persistence rate was 48% and in women 79%, suggesting a higher rate of remission in young adulthood among men compared with women (8). In general, men had an earlier average age of onset than women, a finding that was confirmed in another American study using reconstructed cohort methods (20), and also in a Danish twin study (22). In this large twin study (age 33 to 41 years), it was reported that males with migraine without aura had a significantly younger mean age at onset than females with migraine without aura (16.5 years versus 21.5 years), whereas males and females with migraine with aura were of similar age at onset (22). About 20% of the twins had ceased having attacks of migraine with or without aura for at least the previous 3 years. Almost half of the males with onset of migraine without aura before age 15 had ceased having attacks, compared to one-fifth of the females (Table 46-1). This is in accordance with the

40-year follow-up study by Bille (6); however, in this study the gender difference in cessation of migraine disappeared later in life (age 47 to 53), because males had recurrence of their migraine.

Whitty and Hockaday (24) conducted follow-up of 92 migraine patients for periods of 15 to 20 years and found cessation in about one third of patients and improvement in more than two thirds of those with continuing attacks. Some patients showed a long-term picture of migraine in which attacks ceased completely in early adult life and recurred later. Even after migraine remits, in many patients the capacity to have migraine remains, as demonstrated by reactivation of the disorder after a headache-free period (5–7,24). No age factor (age itself, age at onset, time since onset) was of prognostic value (24). Also, Fry (10), by collecting information for 15 years from his general practice, found a tendency for the severity and frequency of migraine attacks to become less over the years and found cessation in 32% of males and 42% of females after 15 years. Thus, according to several cross-sectional studies, the condition seems to be self-limiting although lifelong among some.

LONGITUDINAL STUDIES

Longitudinal prospective epidemiologic data with periodic contacts and examinations are necessary to draw valid conclusions about the prognosis and natural history of migraine. To date, few studies of representative migraine populations include follow-up evaluations. Bille (2–6) conducted follow-up studies of 73 children (aged 7 to 15 at study onset) 6, 16, 22, 30, and 40 years after an initial assessment. In the migraine group, 34% were free of migraine at the 6-year follow-up and 62% were free of migraine for at least 2 years at the 16-year follow-up. By the 22-year follow-up, about one-third of this group were having migraine regularly. Thus, only 40% of the migraine children were free of migraine at the age of 30 years (Fig. 46-1). In the 30-year follow-up, 53% had migraine and 47% were

TABLE 46-1 Cessation of Migraine with and Without Aura in Relation to Age at Onset (3)

Age at Onset (Year)	Cessation of Attacks	
	Males %	Females %
Migraine Without Aura		
0–14	47*	23*
15–29	13	18
≥30	0	4
Migraine With Aura		
0–14	19	41
15–29	19	16
≥30	9	3

*Significant sex difference.

migraine free. The 40-year follow-up showed that 29% of the original 73 migraine children had suffered from migraine the whole time since childhood. Another 22% still had migraine, although they had experienced one or more migraine-free periods of 2 years or longer. Thus, over a 40-year period, more than half the migraineurs continued to report migraine attacks (see Fig. 46-1) (6). Bille found an unfavorable prognosis in girls compared with boys and also in children with visual aura (3,5).

Sillanpää conducted follow-up of 2,921 Finnish schoolchildren when they entered school at age 7 years and again at age 14 years. Of the children who had migraine at the age of 7, 22% had complete remission and 37% showed some alleviation; a total of 59% improved. On the other hand, 41% were unchanged or experiencing more severe migraine (19). The prognosis for migraine that had begun before school age was better for boys than for girls, and

migraine with onset at age 8 to 14 years had a better prognosis in girls than in boys (19). In another Finnish study of the outcome of migraine in early school-aged children (13), boys at age 11 to 12 had a worse prognosis than girls, as measured by attack frequency.

A number of studies suggest that the prevalence of migraine increases steadily from infancy until approximately the age of 40 years (3,5,9,19,21). A decrease in migraine with increasing age begins in the fifth or sixth decade of life (1,14,21) (see Fig. 46-1 in Chapter 25). The lower prevalence in older age groups observed in cross-sectional studies may be from spontaneous remission, treatment, or increased incidence in younger age cohorts. There is no systematic evidence to suggest increased mortality among older subjects with migraine. Leviton et al. (12) reported that the risk for migraine sufferers dying before age 70 years is 1.9 times higher than that of subjects without migraine. On the other hand, Waters et al. (23), in a 12-year follow-up of the Pontypridd Survey, found significantly lower mortality in women with one or more migrainous features compared with women with headache only or no headache. This unexpected finding may be from higher consultation rates with general practitioners among migraineurs, which would increase detection and improve treatment of other diseases. Some evidence for an increased incidence of migraine in younger age cohorts has been observed (18), but further confirmation of such secular trends is required.

In recent years, population-based studies have demonstrated that migraine is comorbid to several disorders including depression and stroke (see Chapter 26) and comorbidity has implications for prognosis. Moreover, migraine and tension-type headache coexist frequently within the same individual. Actually most migraineurs do also have attacks of tension-type headache (15,17). Frequent tension-type headaches in between migraine attacks may contribute to the development of medication-overuse headache, and in fact both high migraine frequency and medication overuse are very important aggravating prognostic factors (11,16).

In summary, it seems likely that migraine becomes attenuated or disappears with advancing age, although in some subjects recurrence of attacks is seen after a shorter or longer migraine-free period. Additional long-term follow-up studies are needed to evaluate prognosis, mortality, morbidity, comorbidity and incidence of migraine more precisely.

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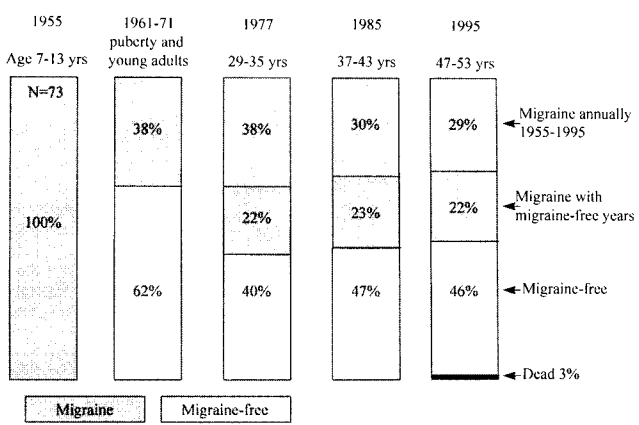


FIGURE 46-1. The prognosis for schoolchildren with pronounced migraine during a 40-year follow-up period. (From Bille B. A 40-year follow-up of school children with migraine. *Cephalgia*. 1997;17:488–491, with permission.)

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