MIGRAINE IN CHILDREN

E S S A Y

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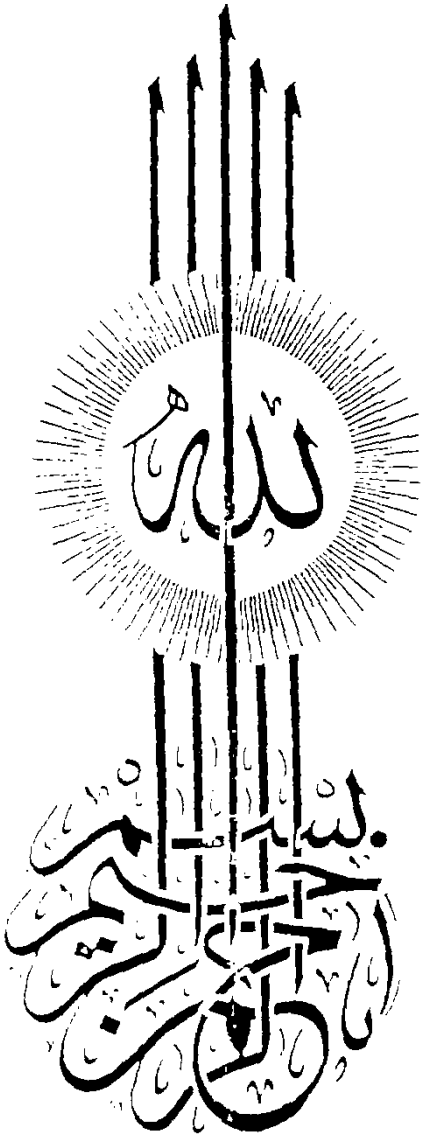

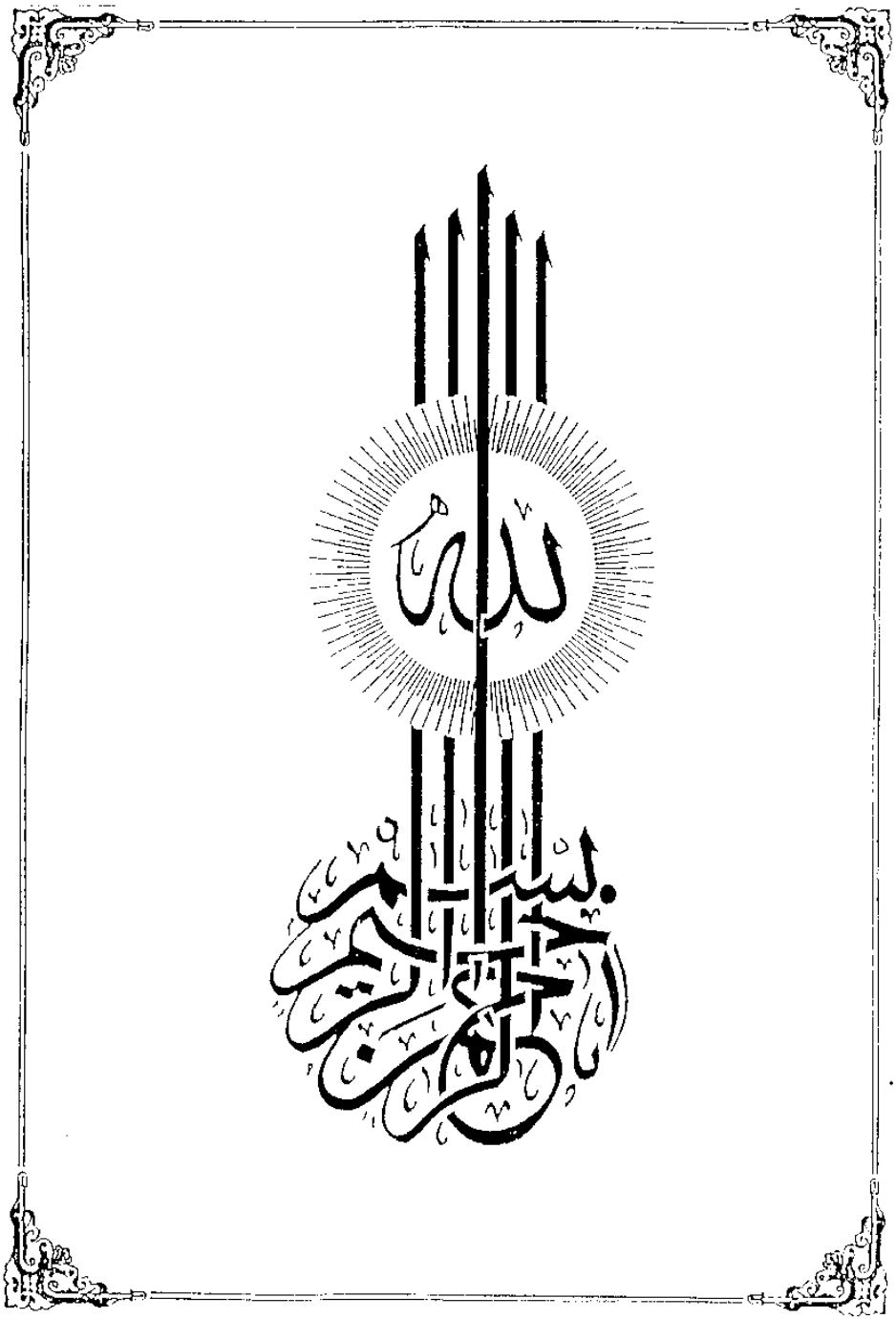

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Although migraine has been considered in the past to be uncommon in children and adolescents, and is a condition associated only with adulthood, there is mounting evidence that it produces significant childhood morbidity.

The prevalence rate of migraine in school children ages 7-15 was 4 per cent (Bille 1962). But a recent study done by Sillanpaa (1983) showed that the prevalence rate of migraine in school children is 10.6 per cent.

It was proved that most chronic intermittent or recurrent headache in childhood is migraine expressed in one form or another.

Several theories have been proposed to explain the mechanisms responsible for migraine attack and the available lines of treatment, but it is apparent that the detailed study of migraine in children has been neglected.

This stimulated us to study migraine in children to throw light on its nature / causes / classification / pathogenesis / pathophysiologic features / Diagnostic criteria / Differential diagnosis and the possible mode of treatment.

PREVALENCE

In several studies involving children, 70 to 80 percent of the headaches appeared when the patients were under 10 years of age (Burke and Peters 1956), (Holguin and Fenichel 1967), and 35 percent of the patients of Krupp and Friedman were under the age of five when their symptoms began (Krupp and Friedman 1953). The most thorough study of migraine in children of school age is that of Bille who found that by seven years, 40 percent of children will have experienced headaches. At the age of 15 years, 75 percent will have experienced headaches (Bille 1962). True migraine occurred in 4 percent (Bille 1967).

Egermark recent study (1982) of school children in age groups, 7,11 and 15 years confirmed Bille's findings that the frequency of headache increases with age. Sex differences were found in older children ages 10 to 15, girls having more headaches than boys. Bille (1967) and Oster (1972). While no significant sex differences are found in 7 years old, (Sillanpaa 1976), (Egermark. 1982).

Several studies report higher prevalence rate of migraine for boys than girls under the age of 10 (Congdon and Farsythe 1979).

Another recent study examined school children longitudinally from ages 7 through 14 (Sillanpaa 1983). Migraine and other forms of headache clearly become more prevalent during the

school years. Migraine that begins before the age of 7 disappears more commonly in boys than girls. If migraine began between ages 8 and 14 years, however, by age 14 it had disappeared in one girl out of three but only in one boy out of five. The prevalence of migraine in 7 years old was 2.9 percent in boys and 2.5 percent in girls, and at the age 14 was 6.4 percent in boys and 14.8 percent in girls. Among individual symptoms of migraine, nausea and vomiting decrease while visual aura increases with age. So the prevalence rate of migraine in this study compared with Bille's (4 percent) is higher. Also with increasing age there was an increasing predominance of girls.

Migraine seems to be more frequently inherited through the mother, and to girls, and also girls seem to have a greater relapse rate than boys (Bille 1981). Baier and Doose 1985 confirms these findings, that migraine is largely inherited from maternal ascendents, irrespective of the sex of the index case, and the prevalence of migraine was significantly higher in the mothers of female as compared to male.

Personality

Certain personality traits are liable to ge migraine. These consisted of sensitivity, cleanliness, thoroughness, the need for approval, and the need to take seriously such responsibilities as school and dress. These children were in the upper part of their class and were considered by both teachers and parents as good students, as well as, orderly and reliable individuals. Despite their generally good performance, these children commonly presented feelings of inadequacy, excessive guilt, and a strong superego (conscious or unconscious conscience). The inhibition of aggressive thoughts and actions occurred frequently, but not, universally. In those children in whom hostility was excessively repressed, there was an excessive need for approval by parents and teachers. It is not surprising, therefore, that headaches among these children were often, though not always, related to unexpressed hostility toward these figures of authority whose approval is so urgently needed. These observations were confirmed by psychological tests. The personalities of these children are not specific for migraine and may, in fact, be present in children with other disorders or in children who are symptom-free. Practically all children studied gave some evidence of psychogenic symptoms such as nail biting (frequent), feeding disturbances, thumb sucking, hair pulling, enuresis, or frequent nightmares. However, only about one-fourth could be called psychoneurotic. A diagnosis of primary behavior disorder or psychosis could not be made in any of the cases. The personalities of the mothers proved

an interesting field for study. Many had migraine and their personality traits were often similar to those of their children (Katz et al., 1963).

Bille, (1962) compared personality characteristics of migrainous school children with those of their fellows. There was no demonstrable differences in social class, intelligence or ambition, or in such symptoms as nervous tics, nail-biting or nocturnal enuresis. The migraine group gave a slower performance in sensory motor tests but with less errors than the control group. They were more fearful, tense and vulnerable to frustration.

Waters, (1975) found that the more intelligent patients and those of higher social class consulted a doctor more frequently. The migraine patient reacts more strongly to stress (Henryk-Gutt and Rees, 1973).

Forty-seven migrainous children were examined medically, neurologically and psychiatrically and compared with matched controls from a dental clinic. A significantly higher proportion of migrainous children than their controls showed signs of a neurotic disorder (mainly anxiety or depression) and had a higher prevalence of neurotic disorder in the previous year. This increased prevalence was found to be associated with a disturbed parental relationship and certain factors related to their mothers (age, "malaise" score). (Maratos and Wilkinson 1982).

Trigger Factors

The effectiveness of trigger factors appears to depend upon the rapidity of change in the internal or external enviroment.

*1 - **Emotional Stress:***

An emotional upset was the most frequently reported precipitating factor (86%). (Maratos and Wilkinson 1982).

Some of the numerous causes that may precede headache are fear of failure, disappointment, rejection, unusual stimulation and anxiety-producing situations. For example, children frequently complain of having headaches on the morning before an important school examination, also, family argument with the child in conflict with its parents or sibling. Frequently both mother and child would develop migraine during an argument. The inability to express and control hostile feelings toward loved ones is certainly, a factor in many of the headaches. Some children had headaches in less hostility-producing situations, such as going to a party or playing ball.

There is a remarkable tendency to develop migraine not at the peak of stress, but during the "Let down" period of relaxation. Moreover, chronic recurrent pain in itself may result in an emotional disturbance. (Merskey and Bayd, 1978).

Experimental data indicate that certain unconscious emotions cause modifications of the brain-stem neurotransmitters,

inducing neurohumoral and vascular changes which underlie the migraine attack in biologically predisposed subjects. (lanzi, et al., 1983).

2 - Food Allergy:

The claim that migraine is an allergic disease has been based on the facts that (1) migraine is found in many patients with allergic disturbances such as hay fever or asthma. (2) Some observers have found that a large proportion of patients with migraine have positive skin reactions to some allergens. (3) Some observers have cured migraine by prescribing a restricted diet. (4) The recurring, sudden, unexplained attacks are typical of other manifestations of allergy. (5) Some observers have found eosinophilia in several patients with migraine. None of these seems pertinent enought to classify migraine as an allergic disease (Ryan, 1978).

When allergic reactions precipitate migraine attacks, the symptom of rhinitis, asthma and/or urticaria almost always accompany the attacks. Rarely, migraine alone is the manifestation of allergy (Medina and Diamond, 1976).

Egger et al, in (1983) found that 93% of 88 children with severe frequent migraine recovered on oligoantigenic diets. The causative foods were identified by sequential reintroduction, and the role of foods provoking migraine was established by a double - blind controlled trials. Many foods were involved, suggesting an allergic rather than an idiosyncratic (metabolic) pathogenesis. The most common foods provoking the attack were, cow's milk, egg, chocolate, orange, wheat,

benzoic acid, cheese, tomato, and tartrazine. Associated symptoms which improved in addition to headache included abdominal pain, behaviour disorder, fits, asthma and eczema. In most of the patients in whom migraine was provoked by non-specific factors, such as blows to the head, exercise and flashing lights, this provokation no longer occurred while they were on the diet. (Egger et al., 1983).

3 - Physical Exertion:

Exercise in short intense bursts, after a prolonged low-level effort in an unconditioned child, may result in a migraine attack in susceptible one. (Dalessio, 1974). Focal neurologic symptoms usually appear immediately following exertion, followed, in several minutes, by nausea and a severe pulsatile headache that may last for one or more hours. Acute effort migraine may occur repeatedly, and may be prevented by ergotamine tartrate taken before the exercise (Lance, 1978).

4 - Sleep:

Excessive sleep may trigger migraine attacks and improvement of the attacks occur when the patients reduce their sleeping time. For some children, too little sleep may be a stimulus for a migrainous attack. For the great majority a brief period of sleep has positive therapeutic value in aborting a migrainous attack. Quary and Meyer in (1978) found that migraine headaches may be connected with a stage of sleep

characterized by alterations of the cerebral vasculature and a drop in circulating serotonin.

5 - **Other Factors:**

Other factors precipitating migraine attacks are head trauma, beverages containing nitrite, glutamate, salts, tyramine, excessive vitamin A, (Pearce, 1971). Also, cold food, cold weather, reading, fluorescent lighting, change in lighting, noise and traveling precipitate the attacks (Congdon and Farsythe 1979).