STUDY OF CLINICAL PROFILE AND ESTIMATION OF VITAMIN B12 LEVEL IN INFANTILE AND PRE-INFANTILE TREMOR SYNDROME
Vivek Sirolia¹, Sunil Arya²

HOW TO CITE THIS ARTICLE:
Vivek Sirolia, Sunil Arya. “Study of Clinical Profile and Estimation of Vitamin B12 Level in Infantile and Pre-Infantile Tremor Syndrome”. Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 40, September 01; Page: 10134-10137, DOI: 10.14260/jemds/2014/3315

ABSTRACT: Infantile and Pre infantile Tremor syndrome is a peculiar condition most commonly seen in Indian subcontinent. Although the number of cases with this syndrome has reduced in recent years, finding of additional clinical features made us to present this series. 30 cases (25 Pre-Infantile Tremor Syndrome and 5 Infantile Tremor Syndrome) were seen during September 2012 to September 2013. Mean age of presentation was 9.96 month. The male to female ratio is 1:1. Pigmentation and pallor is present in all cases while delayed development in (80%) cases and tremors in (13%) cases. Hepatomegaly was present in 16 (53%) cases while splenomegaly in 6 (20%) cases. LRTI was presenting feature in 43% cases followed by AGE (20%) and malaria (16.6%). Striking features was malaria parasite in 4 (80%) out of 5 infantile tremor syndrome and dimorphic anemia in 13 (43%) cases, with Vitamin B12 level less than 200 in 80% cases. All children received Vitamin B12, antibiotics and folic acid. The mean duration of tremor phase was 10.2 days with range 5 to 15 days. There was one mortality due to septic shock. Vitamin B12 and folic acid plays significant therapeutic role in ITS management.

INTRODUCTION: Infantile tremor syndrome (ITS) is a rare clinical Disorder characterized by coarse tremors anemia Regression of motor and mental milestones in children. Exact incidence is not known. In India, it accounts for 0.2 to 2 % of pediatric hospital admissions (1-2% in 1960s, 1.1 % in 1975-77 and 0.2% in mid-1990s). Improvement in nutritional status, living conditions and better weaning practices could explain the reducing Incidence rates over the years. It has been primarily reported from India and South East Asia countries in Asia and Africa.

AIMS AND OBJECTIVE:
1. To study clinical profile in Pre- infantile and infantile tremor syndrome.
2. To estimate Vitamin B12 levels in Pre- infantile and infantile tremor syndrome.
3. To study risk factors and management of Pre- infantile and infantile tremor syndrome.

SUBJECTS AND METHODS: All children presenting with typical features of ITS and Pre ITS, admitted between September 2012 to September 2013 (1 year) in pediatric medical ward at Maharaja Yashwant Rao and Chacha Nehru Balchikutshalaya, M.G.M. Medical college, Indore was analyzed.

A detailed history and physical examination was carried out. Investigations including complete haemogram including peripheral smear for anemia and malaria parasite, Vitamin B12, chest x-ray were done for all children.
RESULTS: The total number of cases seen during this period was 30. All children belong to age group between 6 months to 18 months same as Garg and Srivastava (1969) with mean age 9.96 months and all of them belong to lower socioeconomic group.

The male to female ratio was 1:1. All children were exclusively breastfed till the time of admission except two in which in addition to breast feedings, small quantities of biscuits and rice were given same as Agarwal and Katiyar (1972), Kaul (1972), Ramakumar and Pandove (1975).

Out of 30 children, twenty one admitted during winter and rainy season and nine in summer. Sixty six percent (66.6%) of them belong to severe malnutrition as per IAP classification.

Table I shows clinical features at presentation. In addition to characteristic features hepatomegaly was present in 16 (53%) cases and splenomegaly in 6 (20%) cases.

Thirteen cases (43.33%) had hemoglobin (Hb) less than 5gm/ dl and in remaining cases Hb varied between 5 to 10gm. Dimorphic anemia was predominant picture (43 %) on peripheral smear. Macrocytic anemia was present in 12 (40%) cases.

There was no evidence of tuberculosis and HIV in any of our children. Chest x ray reveals pneumonic patches in twelve cases (40%). Hyperinflation in 2 cases (6.66%). Urine routine and microscopy was done in 1 case reveals 8-10 pus cell but culture was sterile. CSF routine and microscopy done in 1 case where it is normal.

| Sl. No. | Clinical features                          | No. of cases (%) |
|---------|-------------------------------------------|------------------|
| 1.      | Tremors                                   |                  |
|         | Localized                                 | 03              | 10 |
|         | Generalized                               | 01              | 3.33 |
| 2.      | Pigmentation                              |                  |
|         | Localized                                 | 24              | 80 |
|         | Generalized                               | 06              | 20 |
| 3.      | Pallor                                    | 30              | 100 |
| 4.      | Delayed milestones/Mental retardation     | 24              | 80 |
| 5.      | Hepatomegaly                              | 16              | 53.3 |
| 6.      | Splenomegaly                              | 06              | 20 |
| 7.      | LRTI                                       | 13              | 43 |
| 8.      | Malaria                                   | 05              | 17 |

Table I: Clinical features at presentation (n=30)

All children received Iron, folic acid, injection B12, and antibiotics. Twenty five of these children required blood transfusion in addition to above medication. For control of tremors propranalol, carbamazepine and phenobarbitone was used in 03, 01 and 01 cases respectively. The
total duration required for control of tremors in our cases ranged from 5 to 14 days with mean
duration of 10.2 days. There was one mortality due to septic shock.

DISCUSSION: We observed equal sex distribution same as, Chhaparwal et al. (1971) in their study
noticed equal sex distribution. We also observed that there was more cases in rainy and winter
season in month of September and February in our cases as per earlier studies noticed seasonal
variation, while Garg and Srivastava (1969) reported the majority (52.2%) of cases from May to July
indicating probably other than viral etiology playing the role in causation of ITS. Apart from typical
clinical features, we also noticed presence of splenomegaly in 20% cases. Bajapai et al (1968) noticed splenomegaly only in 2 cases (out of 11). The probable reason for this high incidence in our
cases could be due to simultaneous occurrence of LRTI.

The striking feature noticed in our cases was low level of vitamin B12 in 80% cases and
Malaria parasite in 20% cases. This is due to low level of vitamin B12 in mother done in 2 cases while
possibly malaria precipitated tremors in these children. The mean duration for tremor control in our
cases was 10.2 days with range from 5 to 14 days.

Tandon et al reported the mean duration of tremors as 43.4 days with a range from 3 to
400. Other studies reported that mean being 50.5 days with range from 3-225 days. Duration of
tremor was reduced in our cases probably due to addition of vitamin B12.

Majority of our children had LRTI at the time of presentation. Although it has been observed
in earlier studies the presence of LRTI. In view of presence of vitamin B12 and decreased duration of
tremor phase with addition of vitamin B12, we feel that folic acid and vitamin B12 plays a significant
role in management of ITS.

SUMMARY: Compared to the earlier reports, we observed occurrence of ITS equal both in girls and
boys, with winter and rainy seasonal predominance, pneumatic patches on imaging studies,
Dimorphic anemia and malaria parasite at the time of presentation with low level of vitamin B12 and
decreased duration of tremor phase with appropriate therapy. In addition to this there was a higher
incidence of LRTI in large no. of cases.

REFERENCES:
1. Charles C. Garg BK, Srivastava JR: Infantile tremor syndrome. Indian J. pediatr 1969; 36: 213-28.
2. Agarwal SP, Katiyar GP: Infantile tremor syndrome in Chandigarh and Simla. Indian Pract 1973, 26: 45-49.
3. Kaul, KK, Prasan N, Choudhary RM: Some clinical observations and impressions on a
syndrome of tremors in infants from India. J. Pediatr 1963, 63: 1158-66.
4. Ramkumar I, Pandove SP: Infantile tremor syndrome. Indian J. Pediatr 1975; 42: 2150-25.
5. Chhaparwal BC, Singh SD, Mehta S, et al: Magnesium levels in serum and in CSF inj-
meningoencephalitic syndrome (tremor syndrome). Indian J. Pediatric 1971, 38: 331-33.
6. Bajpai. PC, Misra PK, Tandon PN: Further observations on infantile tremor syndrome. Indian
J. Med. Res. 1968: 56: 1398 - 1405.
AUTHORS:
1. Vivek Sirolia
2. Sunil Arya

PARTICULARS OF CONTRIBUTORS:
1. Post Graduate Student, Department of Paediatrics, MGM Medical College, Indore.
2. Assistant Professor, Department of Paediatrics, MGM Medical College, Indore.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Sunil Arya,
E-2/2, MGM Medical College Campus,
Near M. Y. Hospital, Indore, M. P.
Email: drsunilarya22@gmail.com

Date of Submission: 30/07/2014.
Date of Peer Review: 01/08/2014.
Date of Acceptance: 18/08/2014.
Date of Publishing: 01/09/2014.