

Parasitic helminthes infection and anemia among growing children in Nandurbar District, Maharashtra

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Abstract:-

The aim of this study was to determine prevalence of intestinal helminthes infection in children. The stool sample was collected from children from urban as well as rural areas. The sample were collected and transported to field laboratory were ova and cyst tested by using direct saline and iodine wet preparation method infection by at least one intestinal helminthes was found in sample population. The prevalence of *Ascaris lumbricoides*, *Hymenolepis nana*, *Ancylostoma duodenale* and *taenia* species light to moderate intensity of infection was observed. The age group, rural or urban residence, type of water source, boiled or unboiled water, type of defecation site level of personal hygiene and maternal education were associated with helminth infection.

Keywords: intestinal helminthes, children, stool sample, rural areas, *Ascaris lumbricoides*, *Hymenolepis nana*, *Ancylostoma duodenale*, *taenia* species

Introduction:-

Parasitic infections, particularly intestinal helminthes causes hundred of thousand of avoidable death each year and are among the world's most common infections diseases. Intestinal helminthes are more prevalent throughout the tropics,

especially among poor communities records show increasing trends in helminthiasis infections, particularly in developing nations.

School age children are one of group of light risk for intestinal parasitic infections the adverse effect of intestinal parasitic infections have detrimental effect on survival, appetite, growth & physical fitness school attendance and cognitive performance of school age children.

Intestinal parasitic infections are widely prevalent in many developing countries includes India. Most of the population chronically effected with intestinal parasites live in the developing countries these are particularly important in adolescence as they cause or aggravate malnutrition including iron-deficiency anemia there infections, inspite of their considerable morbidity are often ignored probably due to relative low incidence of serious morbidity due to such infections. Adolescence being rapid growth period is at risk of developing nutritional deficiencies include anemia, presence and severity of intestinal parasitic infection among them increase their risk for these deficiencies. This subject gains increased importance among the tribal who are already disadvantage socio economically and face a slow pace of growth it is well known that tribals lag behind nutritionally and have higher morbidity rates especially due to various infections.

Material and methods:-

The study was carried out in October 2011 in villages of Nandurbar district in Maharashtra in cross section study 240 children were covered during the study. Hemoglobin estimation was done using cyanmethaemoglobin method. Anemia level were assessed WHO recommended classification stool samples were collected in screws capped labeled plastic bottle which were distributed one day prior to the day

of collection. Morning stool sample were collected and transported to field laboratory were ova and cyst of intestinal helminthes tested within two hours using direct saline and iodine wet preparation method.

Table – I :- Prevalence of intestinal parasites among children.

| Stool sample | Boy | Girls | Total |
|--------------|-------|-------|-------|
| Tested | 122 | 118 | 240 |
| Positive | 57 | 42 | 99 |
| Negative | 65 | 76 | 41 |
| % Positive | 46.7% | 35.5% | 41.2% |

An overall prevalence rate of 41.2% of intestinal parasites was observed among them. Boy had marginally higher prevalence (46.7%) as compared to girls (35.5%) the difference was statistically not significant. Infection with *Ancylostoma* sp and *Hymenolepis nana* were commonest form of parasitosis observed among them.

Table – II :- prevalence of anemia among children.

| Anemia status | Boys (n=122) | Girls (n=118) | Total (n=240) |
|---------------|--------------|---------------|---------------|
| Mild | 40 (32.7%) | 38 (32.2%) | 78 (32.5%) |
| Moderate | 47 (38.5%) | 40 (33.8%) | 87 (36.2%) |
| Severe | 30 (24.5%) | 31 (26.2%) | 61 (25.4%) |
| | 117 (95.9%) | 109 (92.3%) | 226 (94.1%) |

Table – II :- Shows prevalence of anemia among boys & girls. An overall prevalence rate of 94.1% was observed among them. Boys had significantly higher prevalence (95.9%) than girls (92.3%). The mean hemoglobin in hookworm infected children was significantly lower than those in non-infected.

The environmental sanitation survey showed that all the village had potable water supply in the form of bore well fitted with hand pump. Open-air defaecation was the rule in these village majority of them either did not use footwear or used it occasionally. Most of them used either mud or plain water for washing hands after defaecation.

Discussion:-

Present study shows high prevalence (41.2%) of intestinal parasite with mild to moderate worm load among them. Marginally high prevalence was observed among boys than girls. Hookworms were the most common intestinal parasite found among them. High hookworm infection with mild to moderate load was also observed in a study.

High prevalence of anemia (94.1%) was observed among them with 38% suffering from moderate to severe anemia, high anemia prevalence among children was also observed by others significantly higher prevalence of anemia in hookworm infected children shows association of hookworm and anemia prevalence in children similar association was also observed in other studies it was also seen in them of mean hemoglobin as it was significantly lower in hookworm infected adolescents. High prevalence of hookworm among adolescents seems to be one of the important factors for the observed high prevalence of anemia among them.

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