

Upper Limit of Normal Antistreptolysin-O Titer in Healthy School Children

We studied the level of ASO (anti streptolysin O) titer and throat culture for GABHS (group A beta hemolytic streptococci) in 200 normal healthy school children between 5 to 15 years of age. We noted the upper limit of normal titer of 242 IU in the healthy school children around Mysore city. Throat culture was positive for GABHS in 9% of healthy school children indicating the carrier state.

Key words: *Antistretolysin O, Carrier, GABHS, Normal value, Titer.*

Antistreptolysin-O (ASO) titer has been shown to vary with age, geographical location, season and site of infection. Hence a single specimen when available requires to be compared with a predetermined baseline value or upper limit of normal (ULN) in a particular geographical area. We conducted this study to determine the ULN of ASLO titer in normal healthy children and also to determine prevalence of GABHS (Group A beta hemolytic streptococci) carrier state.

The study included 200 healthy children between 5 to 15 years (100 from rural school and 100 from urban school) selected by simple random sampling technique. ASLO titer and throat swab culture were done in all these children using appropriate standard tests. Children with clinical signs of sore throat and those who were treated with antibiotic within last 2 weeks were excluded. Data were collected after ethical committee clearance and informed consent.

The geometric mean titer (ULN) in children between 5-10 y and 10-15 y was 121.8 (236.3) IU ($n=98$) and 112.5 (244.5) IU ($n=102$), respectively. Overall in 200 children, the ULN of ASO was 242 IU. Comparative studies done in India have reported ULN values of 239 IU (Chandigarh)(1) and 305 IU

(Mumbai)(2). Studies from western hemisphere have reported ULN between 170-240 IU(3-5).

Eighteen (9%) throat swabs revealed Group A beta-hemolytic streptococci. Past studies have demonstrated the prevalence of asymptomatic throat carriage of GABHS to range from 3.7 to 28.8%(6,7).

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REFERENCES

1. Sethi S, Kaushik K, Kavya, *et al.*, ASO titers in normal healthy school children of 5-15 years. *Indian Pediatr* 2003; 40: 1068-1071.
2. Kamarkar MG, Venugopal V, Joshi L, *et al.* Upper limit of normal ASO and Anti DNase B in Mumbai. *Indian Med Res (suppl)* 2004; 119: 26-28.
3. Klein GC, Baker CN, Jones WL. Upper limit of normal antistreptolysin – O and anti deoxy-ribonuclease beta titers. *Applied Microbiol* 1971, 21: 999-1001.
4. Kaplan EL, Rothermal CD, Dwight R, *et al.* Antistreptolysin O, AntiDNase B titers. Normal values for children aged 2 to 12 years in USA. *Pediatrics* 1998; 101: 86.
5. Rennerberg J, Soderstrom M, *et al.* Age related variations in ASLO titer. *Eur Clinical MicrobiolInfectDis* 1989;8: 792-795.
6. Navaneeth B, Nimananda, Chawda S. Prevalence of beta hemolytic streptococci carrier rate among school children in Salem. *Indian J Pediatr* 2001; 68: 988-986.
7. Gupta R, PrakashK, Kapoor AK. Sub clinical group a streptococcal throat infection in school children. *Indian Pediatr* 1992; 29: 1491-1494.