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Letter to the Editor – Study Letter

Frequency of asymptomatic neurosyphilis in patients with latent syphilis: A 4-year retrospective study from a tertiary care center

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Dear Editor,

Latent syphilis (LS) is that stage of syphilis where there are no clinical signs or symptoms but only serological evidence.[1] Lumbar puncture (LP) is a procedure that which requires expertise and is essential for the diagnosis of neurosyphilis. The primary objective of this study was to determine the frequency of asymptomatic neurosyphilis in cases of LS.

This is a 4-year retrospective descriptive study done in a tertiary care center. The data were obtained from the STI cards of the clinic. The study population included all cases of LS in the study period. LS was defined as cases with no clinical signs and symptoms of syphilis but positive Venereal Disease Research Laboratory (VDRL) and Treponema Pallidum Hemagglutination Assay (TPHA) test. Early LS (ELS) was defined as serological evidence of syphilis within two years of last contact, and late LS (LLS) after two years without documented evidence of treatment for syphilis.[2] In cases where the exact period could not be determined, they were denoted as LS of unknown duration (LSUD).[2]

The inclusion criteria included all cases of LS according to the criteria mentioned above and those who had undergone LP for CSF examination. The CSF parameters for diagnosing asymptomatic neurosyphilis were CSF VDRL positive, cells more than five cells/mm^3 (normal 0–5 cells/mm^3), CSF glucose more than 80 mg (normal 50–80 mg), and CSF protein more than 45 mg (normal 15–45 mg).[3] The exclusion criteria were patients who were diagnosed as LS, but LP was not done. Data were analyzed by descriptive statistics.

There were 200 cases of LS in which LP was done and 14 cases of LS in which LP was not done. There were 136 males (136/200, 68%) and 64 females (64/200, 32%), with a male/female ratio of 2.1:1. The mean age was 42.2 years. The commonest age group belonged to the 21–30 years group (36 cases, 18%). The salient sexual history and other details are given in Table 1. LSUD was the most common type of LS in this study, accounting for 179 cases (179/200, 89.5%), followed by LLS 8 cases (8/200, 4%) and ELS 5 cases (5/200, 2.5%). LSUD accounted for the maximum number of LS cases. This is in conformance with other studies as, very often, it is difficult to determine the exact period to determine ELS or LLS.[3,4] There were 8 cases (8/200, 4%) of asymptomatic neurosyphilis in this study [Figure 1]. All the cases of asymptomatic neurosyphilis (8, 100%) occurred in LSUD. The cases of asymptomatic neurosyphilis were treated with injection of Crystalline Penicillin (CP) 40 lakhs units 4th hourly for 14 days according to National AIDS Control Organization (NACO) recommendation.[2]

Table 1 : Salient sexual contact features and high-risk behavior.

PMC	EMC	Both PMC and EMC	Denies contact	Heterosexual	Homosexual	Bisexual	Source –Sex worker	Friend	Casual	I/V drug abuse	Blood transfusion	Condom usage
86	25	15	74	89	28	9	32	67	27	3	8	13
43%	12.5%	7.5%	37%	44.5%	14%	4.5%	16%	33.5%	13.5%	1.5%	4%	6.5%

PMC: Premarital contact, EMC: Extramarital contact

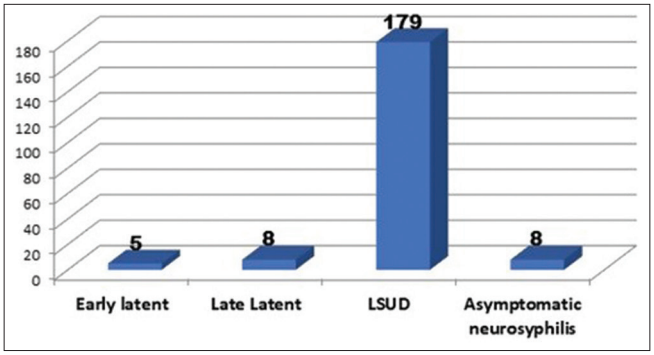

Figure 1: Types of syphilis (n = 200), LSUD: Latent syphilis of unknown duration.

In the present study, the prevalence of asymptomatic neurosyphilis, the primary objective of this study, was only 4%. This shows a low prevalence; compared to one study done in Poland showed a frequency of 18%.[5] Whether routine cerebrospinal fluid (CSF) studies should be done in cases of LSUD is a matter of controversy. Centers for Disease Control and Prevention guidelines state that CSF studies should only be done if there are clinical signs and symptoms of central nervous system involvement. NACO does not give guidelines regarding CSF examination in cases of LSUD. All the cases of asymptomatic neurosyphilis (eight cases) in this study had abnormal levels of CSF glucose and protein. However, abnormal biochemical parameters have been reported in all stages of syphilis, and only a CSF VDRL positivity qualifies it to be labeled as asymptomatic neurosyphilis, as CSF VDRL is highly specific.[6] LP is a specialized procedure with known complications. However, we are of the opinion that even though the frequency of asymptomatic neurosyphilis was low in this study, we advocate LP to be done, especially in a tertiary care center, as asymptomatic neurosyphilis requires CP for treatment, as only this crosses the blood-brain barrier in significant amounts to kill *Treponema pallidum* compared to benzathine penicillin.[7]

In conclusion, this study showed a low frequency of asymptomatic neurosyphilis in cases of LS. We advocate LP to be done in centers where it is a routine procedure for adequate treatment of asymptomatic neurosyphilis.

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

Dr. Pradeep Nair is on the editorial board of the Journal.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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