ABSTRACT

Background: The role of right hemisphere (RH) in lexico-semantic processing continues to remain as a debatable issue. In the past, various techniques and paradigms employed in several populations have provided equivocal evidence on the role of RH in lexico-semantic processing.

Aim & Objectives: This study aimed to investigate the debatable role of RH in lexico-semantic processing. The specific objectives of the study were: (1) to compare the lexical retrieval skills in a group of right-handed subjects with right hemisphere damage (RHD) with that of age-, gender-, and literacy-matched neurologically normal subjects and (2) to analyze the errors to assess the nature of underlying lexico-semantic processing deficits in the clinical group, if any.

Methods: A comprehensive battery of convergent (i.e., confrontation naming) and divergent (i.e., verbal fluency) tasks was developed and subsequently administered on the two groups. The study employed stringent response coding criteria in the former task. Under the same task, the performance of the two groups was compared in terms of the accurate scores as well as the errors. Under the divergent tasks, the accurate responses as well as certain additional measures such as cluster size, switching and time course of lexical retrieval were compared between the two groups.

Results: The RHD subjects performed poorly on all but one (definition naming) task. The analysis of errors in the convergent task showed a preponderance of the delayed correct responses, no responses, and semantic errors. The comparison of performance on divergent groups showed significant difference in the semantic and phonemic verbal fluency tasks. Subjects with RHD showed significantly smaller cluster size only in the semantic, but not in the phonemic condition. The two groups did not show any difference in terms of the switching strategy under both semantic and phonemic conditions. The time course analysis showed a similar pattern in both groups with a gradual reduction in the number of exemplars generated across the four time quadrants of 60 seconds duration.

Conclusions: The present study provided evidence for the role of RH in lexico-semantic processing. Additionally, the study advocates the use of comprehensive batteries with stringent scoring criteria in the assessment of lexical-retrieval skills of subjects with RHD.