TITLE Case-based Learning In Neurophysiology For Preclinical student

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Introduction

Case-based teaching is a relatively new method of teaching basic sciences in medical colleges.. The aim of our study is to compare the effectiveness of conventional didactic lecture and case-based teaching method for teaching neuro-physiology for preclinical medical students (MBBS) in our college.

Materials and methods :

Sixty preclinical medical students were chosen for this study.They were divided into two groups-, Group A & Group B ,each with 30 students..A topic in neurophysiology –cortico-spinal tract physiology -given to all students to study at home.A pre-test questionnaire was given to all the students . Group A students were then given the applied aspect of the chosen topic by conventional teaching method and then they were assessed by a post-test questionnaire.For teaching the applied aspect of the chosen topic Group B students were shown images of real clinical neuro- case for analysis of the patho-physiology involved in the topic given and then they were assessed by a post-test questionnaire .
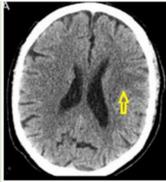
Results:

Students showed better performance after the case-based study method.

Conclusions:

The students'feedback indicated that case-based teaching could be used as an alternative to conventional lectures and may facilitate skills acquisition,.

Representative images

Case Number	CT--SCAN images	Level of pyramidal Tract lesion
2		Left corona radiata level Shows a lesion-yellow arrow. Patient had right side hemiplegia
3		Left internal capsule- posterior limb lesion-yellow arrow Patient had right side hemiplegia

Discussion

Conventionally, teaching of undergraduate medical students is done with the help of didactic lectures, practicals, a tutorial, and clinics, which are mostly used as passive teaching and learning methods; however, they lack in the development of problem-solving or reasoning skills of the students. The results our study indicate that the knowledge of students is significantly improved by this new teaching method (CBL)(3),. The Students' satisfaction and examination performance were better in this study.The students enjoyed case-based teaching and considered that their clinical reasoning, diagnostic interpretation and ability to think logically were improved. The results of our study show that most undergraduate students preferred such interactive case-based discussions to traditional lectures in physiology.Although traditional lectures convey factual information well, they are not well suited to higher levels of learning, such as critical thinking, analysis and problem-solving, which must be learnt by doing.The individual teacher's qualities play a crucial role in the learning experience and in the teaching

Table-1-participants number

	GROUP-A (n=30)	GROUP-B (n=30)
Pre-test questionnaire in CM	10 questions	10 questions
Post-test questionnaire in CM	10 questions	-
Post-questionnaire in CBL	-	10 questions
Questionnaire on CBL	-	10 questions

CM-conventional method of learning; CBL-case-based learning method

TABLE-2 pre-test questionnaire (n=60)-results

Number of correct answers	Group A	Group pB	Total
< 5	28	26	54
6-7	2	4	6
8-10	-	-	-

TABLE-3 post-test questionnaire for group A students (n=30) who had "CM" of learning

Number of correct answers	Group A
< 5	18
6-7	9
8-10	3

TABLE 4-post—test questionnaire for group B students (n=30) who had "CBL" of learning

Number of correct answers	Group B
< 5	23
6-7	4
8-10	3

TABLE-5 comparison of both methods of learning

Number of correct answers	Group A	Group B
< 5	18	23
6-7	9	4
8-10	3	3

Table-6 –post-test survey for CBL method.

comments	Strongly disagree	Disagree	Agree	Strongly agree
1CBL is a better method of learning than the conventional one.	-	-	28	2
2. The learning format using case-based study helped one learn the content in a more comprehensive way	-	-	20	10
3.It promotes better understanding of neurophysiology and its applied aspect.	-	-	26	4
4.It helps in better retention of knowledge.	-	-	25	5
5.It helps in improving students skills to make him a better future physicians.	-	-	30	-
6.I would like such CBL approaches to other parts of neurophysiology.	-	-	24	6

TABLE-7 BRAIN SCAN reports SHOWING CORTICOSPINAL TRACT LESIONS AT VARIOUS LEVELS.

Note- A brain lesion on one side, produces paralysis in opposite side half of body

Patient number	Clinical presentation	Brain lesion level
Case 1	left side hemiplegia	Right motor cortex
Case 2	right side hemiplegia	Left corona radiata
Case 3	right side hemiplegia	Left internal capsule- posterior limb
Case 4	right side hemiplegia and left cranial nerve palsy.	brain stem -midbrain level-left side.
Case 5	Left side hemiplegia and right cranial nerve palsy	brain stem –pons level- right sideside.
Case 6	right hemiplegia	brain stem -medulla oblongata level-left side.

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