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A PROSPECTIVE OBSERVATIONAL COMPARATIVE STUDY ON THE EFFICACY OF ALTEPLASE VERSUS TENECTEPLASE IN ACUTE ISCHEMIC STROKE AND TO ASSESS THE CHANGES IN QUALITY OF LIFE IN THESE PATIENTS AFTER THROMBOLYTIC THERAPY.

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ABSTRACT:

Background: Cerebrovascular Accident (CVA) is a common term used to describe acute ischaemic stroke. A blood clot can break (or rupture), causing a stroke, or it might block a blood artery that supplies the brain with nutrition and oxygen. When this occurs, the brain cells there die because they are unable to receive the blood or oxygen they require. The thrombolytic medications Tenecteplase and Alteplase are used to treat ischaemic stroke. Fibrinogen is transformed by alteplase into the proteolytic enzyme plasmin, which lyses both fibrin and fibrinogen. Tenecteplase increases the amount of plasminogen that is converted to plasmin in comparison to when fibrin is not present.

Methods: The research included 50 participants with AIS. The study divided the patients into two groups: 25 were treated with Alteplase and 25 with Tenecteplase. The effectiveness of Alteplase and Tenecteplase is evaluated utilising the NIHSS and MRS. An SS-QOL questionnaire was used in individuals with AIS to examine their health-related QOL with Alteplase and Tenecteplase. HADS assesses anxiety and sadness. The costs of the two medications are compared.

Result: Tenecteplase is more effective than Alteplase, according to the NIHSS and MRS assessments. The quality of life in Tenecteplase patients differs significantly from Alteplase patients.

KEYWORDS: Acute ischemic stroke, Tenecteplase, Alteplase, NIHSS, MRS, SS-QOL, HADS.

INTRODUCTION:

According to the World Health Organisation, stroke is defined as rapidly developing clinical signs indicating a localised (or generalised) impairment of brain function that lasts more than 24 hours or ends in death and has no evident underlying cause other than a vascular region.
Strokes are sometimes known as brain attacks or cerebrovascular accidents. A stroke occurs when a blood artery that supplies the brain with oxygen and nutrients becomes clogged or breaks. When this happens, brain cells in that location lose access to the blood (or oxygen) they require and die.

CLASSIFICATION:

The TOAST classification denotes five subtypes of ischemic stroke[6]:

- Small vessel occlusion
- Cardio embolism
- Large artery atherosclerosis
- Stroke of other determined etiology
- Stroke of undetermined etiology

ETIOLOGY:

Risk factors for stroke that can be changed treated or medically managed[9]:

- High blood pressure
- Heart Disease
- Diabetes
- Smoking

Risk Factors for stroke that cannot be changed[9]

- Older age
- Gender
- Hereditary or Genetics

- History of prior stroke

CLINICAL FEATURES:

- Loss of balance
- Blurred vision
- Facial palsy
- Weakness
- Speech difficulty
- Loss of sensations in one half of the body[1]

DIAGNOSIS

Imaging Tests:

- Computerized Tomography
- Magnetic Resonance Imaging

Blood or Heart Tests:

- Blood Tests
- Electrocardiogram[2]

Physical Examination:

During the physical exam:

- Confusion
- Coordination and balance
- Mental Alertness
- Numbness or weakness in the face, arms, and legs
- Trouble speaking or seeing clearly will be checked accordingly[4].
- **TREATMENT**

The initial treatment for stroke is antiplatelet (Aspirin), or fibrinolytic medication Alteplase (Actilyse), Tenecteplase (Tenectase) is also recommended11.

ALTEPLASE

Alteplase is a biosynthetic form of human tissue-type plasminogen activator (tPA). It is produced utilising recombinant DNA technology. It transforms fibrinogen to plasmin, a proteolytic enzyme that lyses both fibrin and fibrinogen. Intravenous Alteplase is largely eliminated by the liver, with an initial half-life of less than 5 minutes and a terminal half-life of 72 minutes.

TENECTEPLASE

Tenecteplase is a recombinant, structurally modified version of human tissue plasminogen activator (tPA). In vitro studies show that Tenecteplase converts plasminogen to plasmin more efficiently in the presence of fibrin14. Fibrin specificity reduces systemic plasminogen activation and, as a result, circulating fibrinogen breakdown. It has an initial half-life of 20-24 minutes and a terminal half-life of 90-130 minutes.15

MATERIALS AND METHODS

Data source: All relevant data for the study were gathered from case records and direct interviews with patients and carers. Data from case records and carers were obtained using a specially developed proforma. The Research and Ethical Committee of Cosmopolitan Hospital in Thiruvananthapuram authorised the study.

Study population: Patients were taken from Cosmopolitan Hospital's Neurology Department. We acquired informed consent. The research took six months to complete.

Assessment of Efficacy: NIHSS and MRS scale are used to evaluate effectiveness.

Assessment of QOL: Information was gathered through direct interviews with patients and carers as well as case files of stroke patients, and this information was documented in the SSQOL questionnaire.

Assessment of Anxiety and Depression: Information was gathered from the stroke patients' case files and through in-person interviews with the patients and their carers, which were documented in the HADS questionnaire.

Statistical Analysis: Depending on the kind of data, the student t-test was used to evaluate the comparison of quantitative variables between two groups.

OBSERVATION AND RESULTS:

A prospective observational research was conducted at a multispecialty tertiary care hospital with the aim of evaluating "the efficacy of Alteplase versus Tenecteplase in acute ischaemic stroke and to assess the change in quality of life in these patients after thrombolytic therapy." 50 individuals with AIS were the subjects of this study, and data from them were gathered and examined. Twenty-five of the fifty patients that were chosen received treatment with Tenecteplase and twenty-five with Alteplase. With the use of NIHSS and MRS, the study sought to compare the effectiveness of Tenecteplase and Alteplase. It also sought to evaluate health-related quality of life using the SSQOL scale, as well as anxiety and depression using the HADS scale. In AIS patients, the cost-effectiveness of Tenecteplase and Alteplase was examined.

DEMOGRAPHIC DETAILS OF THE PATIENTS:

Information about the patients' demographics was gathered and documented.

PERCENTAGE DISTRIBUTION OF PATIENTS BASED ON AGE:

The following table shows the percentage distribution of patients based on their age.

AGE-WISE DISTRIBUTION OF THE STUDY:

Age-wise distribution (Years)	Number of patients (n=50)	Percentage (%)
50-60	10	20%
61-70	20	40%
71-80	12	24%
81-90	8	16%

Table: 1 Age distribution of the study population

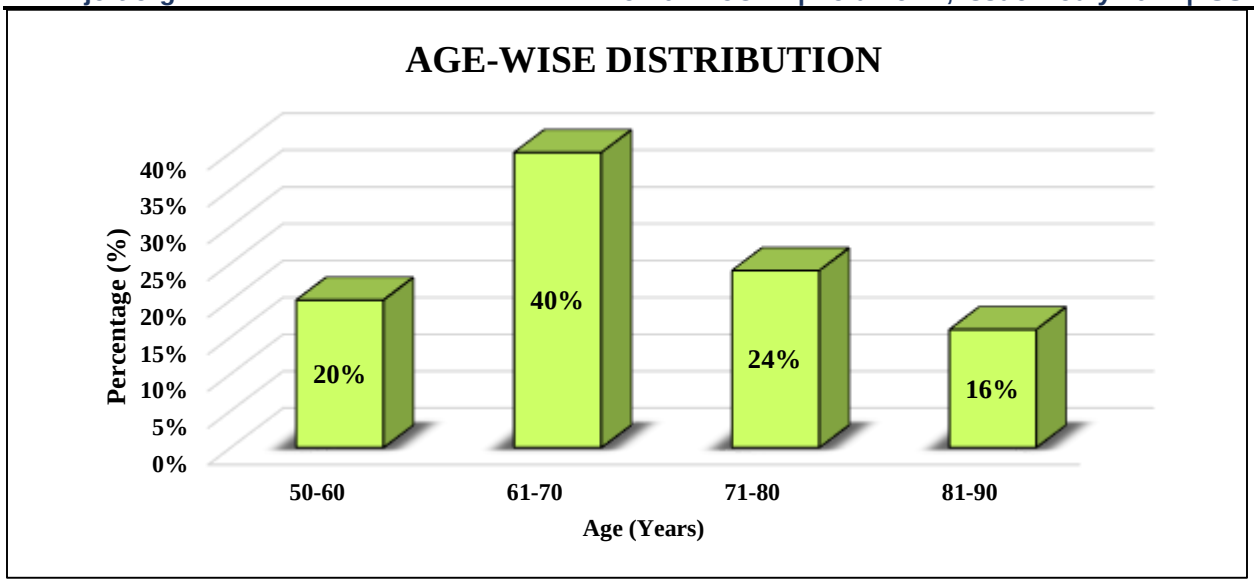


Figure: 1 Age-wise distribution of the study population

As per the demographic data of the study population, ischemic stroke patients were found to be more in the age group of 61-70 with a percentage of 40%, followed by the age group of 71-80 with 24%, followed by the age group of 50-60 with 20% and 16% were in the age group of 81-90.

GENDER WISE DISTRIBUTION OF STUDY POPULATION:

GENDER	Number of Patients (n=50)	Percentage (%)
MALE	27	54%
FEMALE	23	46%

Table: 2 Gender wise distribution of the study population

Gender wise distribution of the overall study population indicate that male population overrides female population with 54% dominance over 46%. The entire study population include 27male patients and 23 female patients, which indicates that the incidence of ischemic stroke in female is lessthan that of male population.

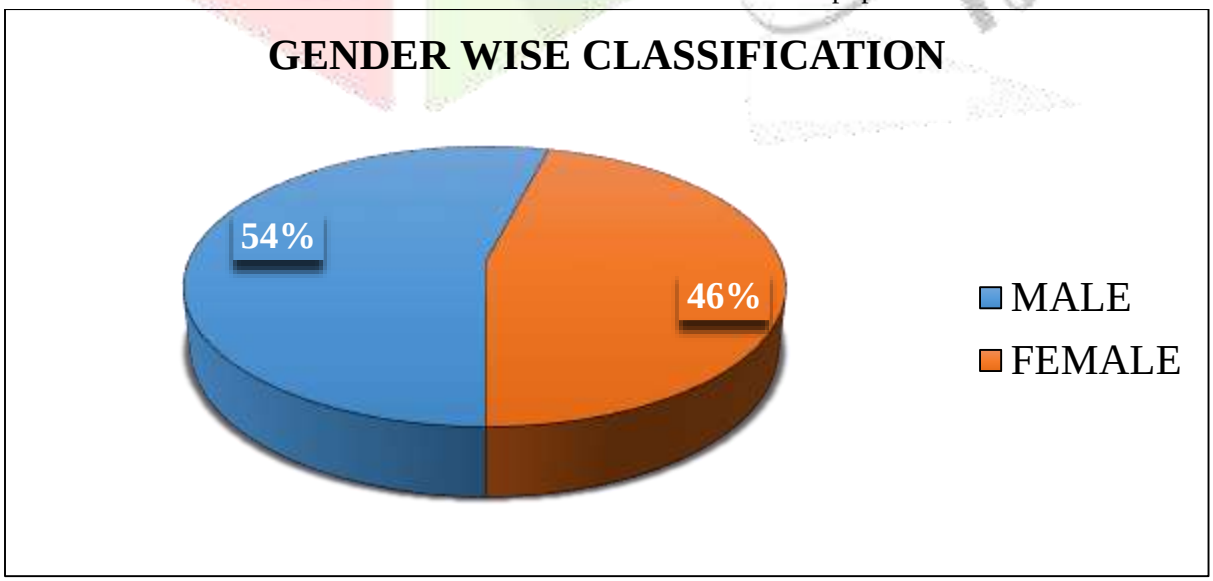


Figure: 2 Gender wise distribution

PERCENTAGE DISTRIBUTION ON STUDY GROUP:

Groups	No of patients (n=50)	Percentage (%)
GROUP A (ALTEPLASE)	25	50 %
GROUP B (TENECTEPLASE)	25	50%

Table: 3 Study group distribution

The thrombolytic effect of Alteplase and Tenecteplase was obtained by comparing the population which was enrolled into two groups. One group was treated with Alteplase andthe other group with Tenecteplase. There were 25 patients in Group A and 25 patients in Group B.

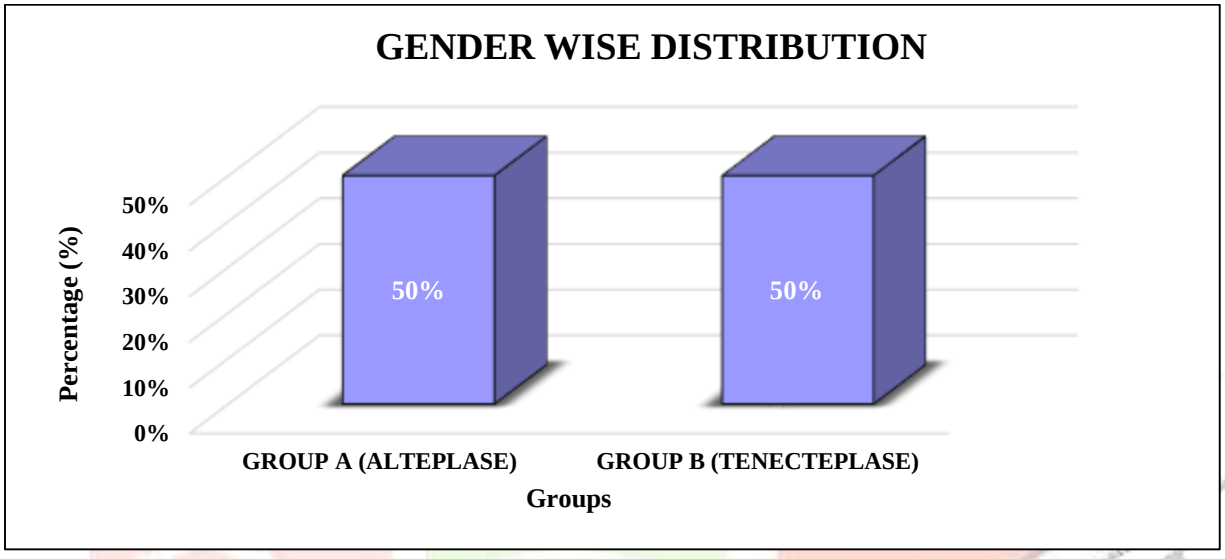


Figure: 3 Study group distribution

PERCENTAGE BASED ON SYMPTOMS OF STROKE:

Symptoms of Stroke	Number of patients	Percentage (%)
WEAKNESS	44	25.7%
VISION PROBLEMS	5	2.9%
LOSS OF BALANCE	23	13.5%
DYSARTHRIA	38	22.2%
APHASIA	14	8.2%
FACIAL ASYMMETR	38	22.2%
NUMBNESS	2	1.2%
SUDDEN CONFUSION	2	1.2%
OTHERS	5	2.9%

Table 4: Symptoms of Stroke

Table 5, it was observed from total patients that 25.7% of patients were having weakness, 22.2% had dysarthria,22.2% had facial asymmetry,13.5% had loss of balance, 8.2% had aphasia,2.9% had vision problems,2.9% had other problems and 1.2% had numbness and 1.2% had sudden confusion.

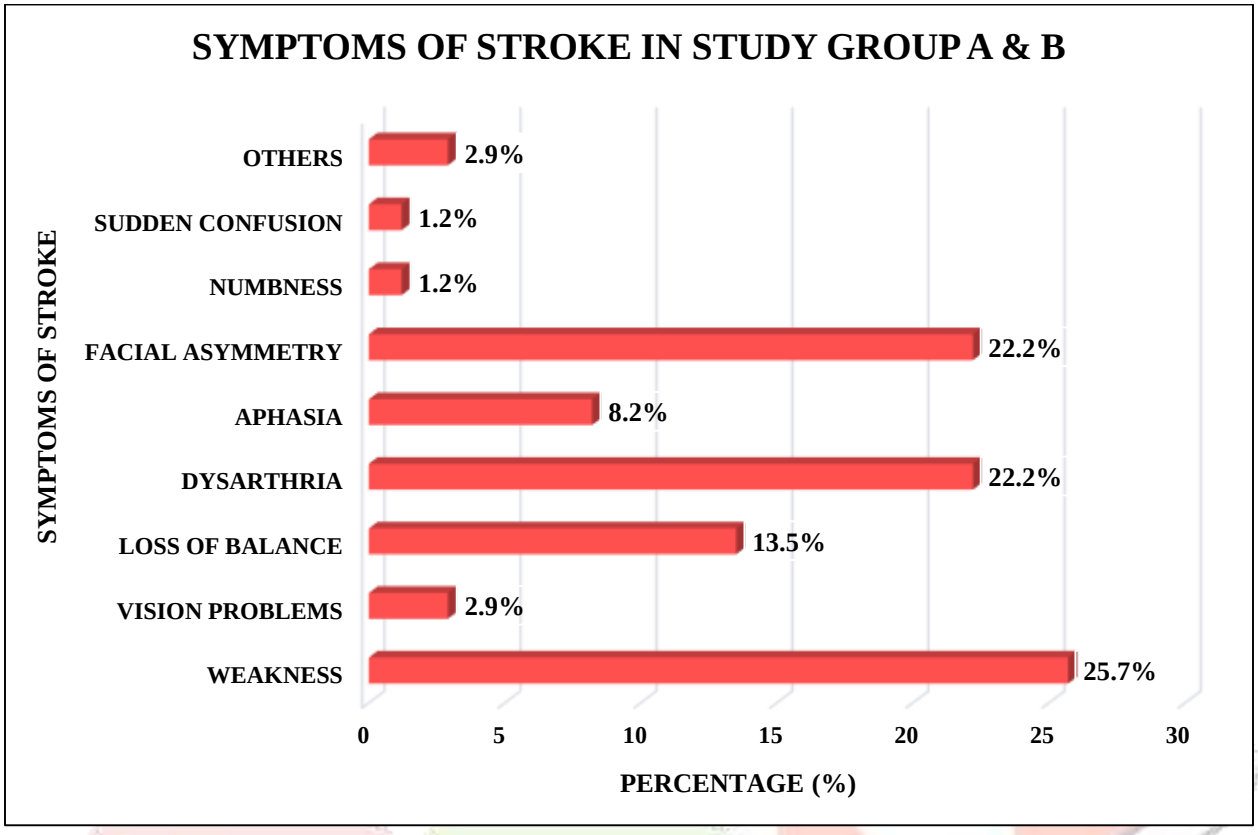


Figure 4: Symptoms of Stroke

PERCENTAGE DISTRIBUTION OF OTHER DISEASE CONDITIONS:

Other Disease conditions	Number of patients (n=50)	Percentage (%)
HYPERTENSION	40	33.1%
KIDNEY DISEASE	1	0.8%
THYROID DISEASES	2	1.7%
HEART DISEASE	18	14.9%
DYSLIPIDEMIA	17	14.0%
DIABETES TYPE2	29	24.0%
COVID-19 INFECTION IN 3 MONTHS	1	0.8%
OTHERS	13	10.7%

Table 5: Other Disease Conditions

Table 6, shows was observed that the patient with AIS 33.1% had Hypertension ,24% had diabetes type2 ,14.9% had Heart diseases ,14% had dyslipidemia, 10.7% had Others, 1.7% had Thyroid diseases, 0.8% had kidney disease, 0.8% had covid-19 infection in 3 months.

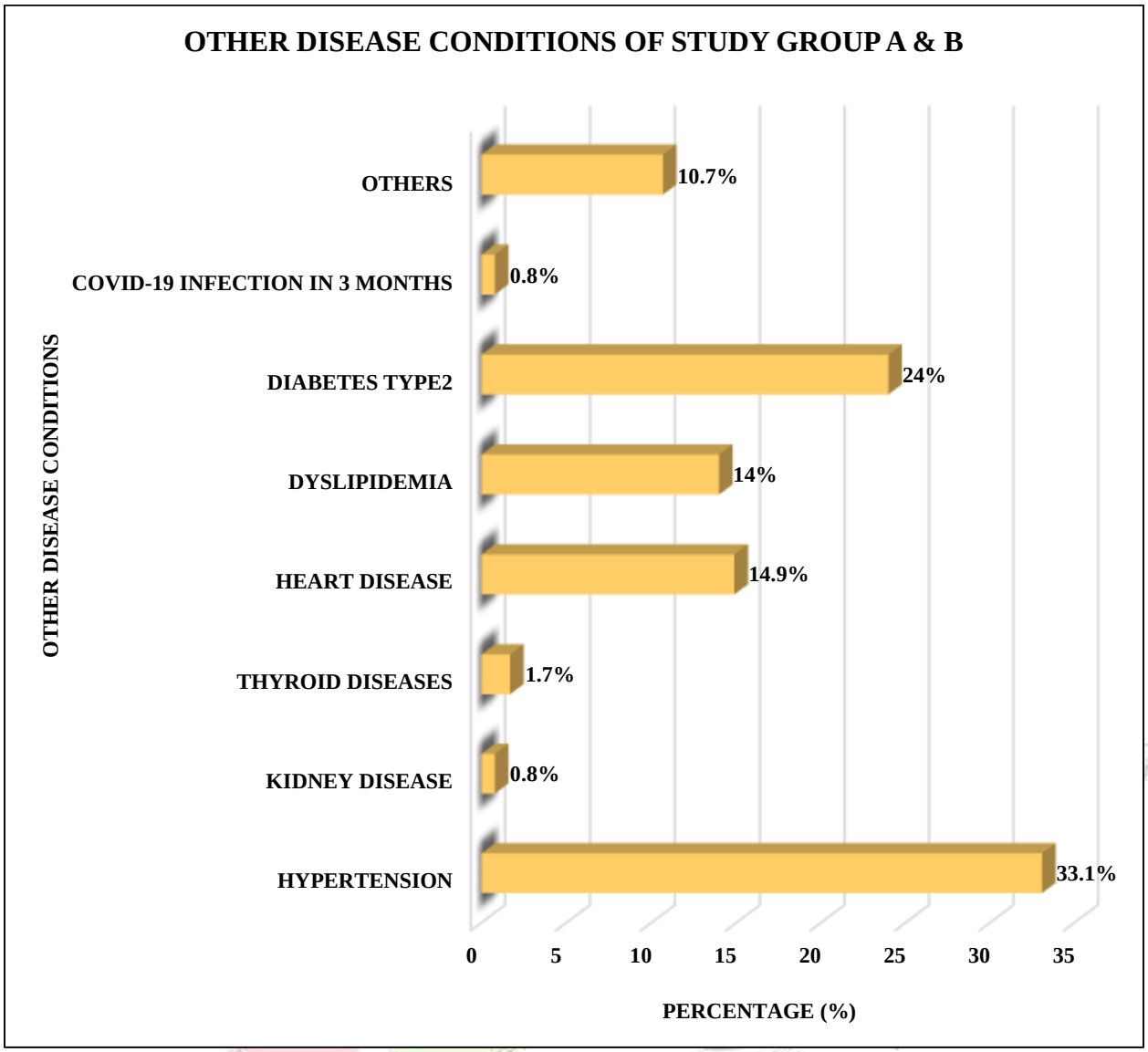


Figure 5: Other Disease Conditions

ASSESSMENT OF THE EFFECT OF ALTEPLASE VERSUS TENECTEPLASE:

The effect of both drugs Alteplase and Tenecteplase was assessed by using NIHSS Scale. The study was conducted in two groups, one group was treated with Alteplase and the other group was treated with Tenecteplase. The baseline data was collected as soon as possible at the time of admission. The follow-up was conducted in the first week, first month, and third month.

NEUROLOGICAL IMPAIRMENT AT BASELINE GROUP A (ALTEPLASE):

Neurological impairment	Number of patients (n=25)	NIHSS score (Mean ± SD)
Minor (1-4)	4	3.75 ± 0.5

Moderate (5-15)	20	7.20 ± 2.1
Severe (16-20)	1	17

Table: 6 Neurological Impairment at Baseline – GROUP A

Table 7 shows the assessment of the effect of Alteplase on the neurological impairment of the patient and the NIHSS Score of the patient. Of 25 patients about 20 patients from the study had moderate neurological impairment and NIHSS Score is 7.2±2.1, about 4 patients from the study had minor neurological impairment and had a score of 3.7±0.5, and 1 patient had severe neurological impairment with an NIHSS score of 17.

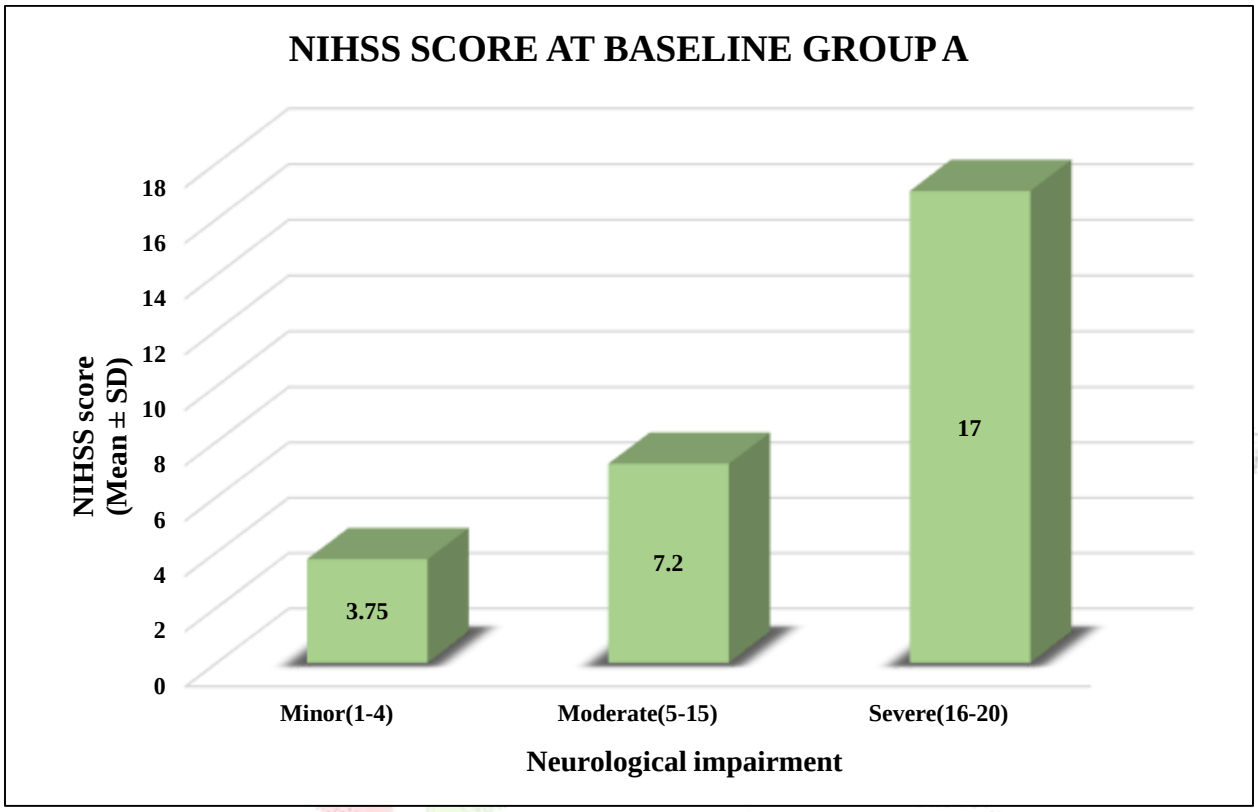


Figure: 6 Neurological Impairment at Baseline GROUP A

FIRST FOLLOW UP- ASSESSMENT ON NEUROLOGICAL IMPROVEMENT OF GROUP A (ALTEPLASE):

Neurological impairment	Number of patients (n=25)	NIHSS Score (Mean ± SD)
Minor (1-4)	11	3.4 ± 0.6
Moderate (5-15)	14	6.3 ± 1.6
Severe (16-20)	0	0

Table: 7 Neurological Improvement at first follow up – GROUP A

Table 8, shows the neurological impairment of group A at the time of the first follow up 56% of patients had a moderate neurological impairment and NIHSS Score was 6.3±1.6, and 44%patientsient had a minor neurological impairment and the NIHSS score was 3.4 ± 0.6.

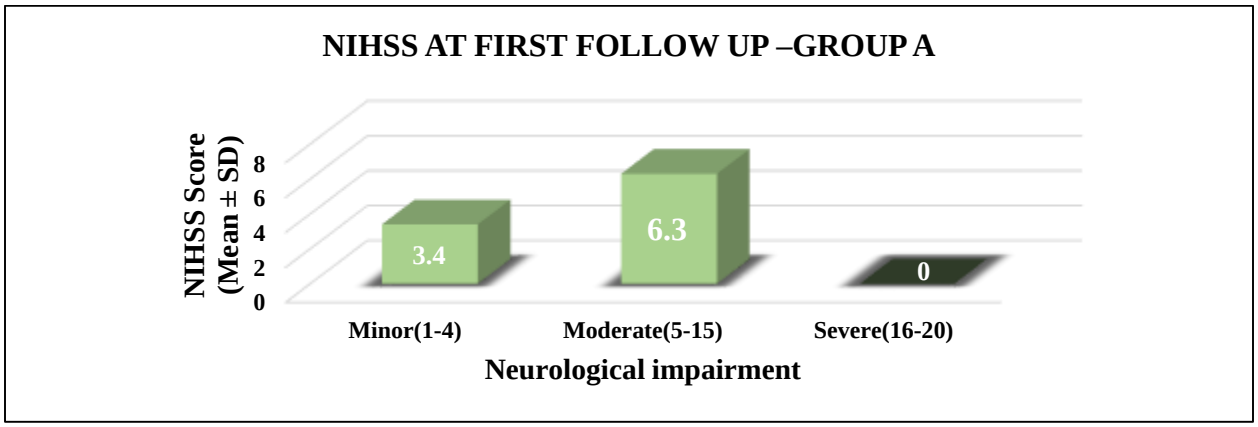


Figure: 7 Neurological Improvement at first follow up – GROUP A

SECOND FOLLOW-UP ASSESSMENT ON NEUROLOGICAL IMPROVEMENT OF GROUP A (ALTEPLASE):

Neurological impairment	No of patients (n=25)	NIHSS Score (Mean ± SD)
Minor (1-4)	19	2.6 ± 1
Moderate (5-15)	6	5.8 ± 1.6
Severe (16-20)	0	0

Table: 8 NIHSS data at the second follow up of GROUP A

Table 9, shows the neurological impairment of group A at the time of the second follow up were 76% of patients had a minor neurological impairment and NIHSS Score was 2.6±1 and 24% of patients had a moderate neurological impairment and the NIHSS score was 5.8±1.6.

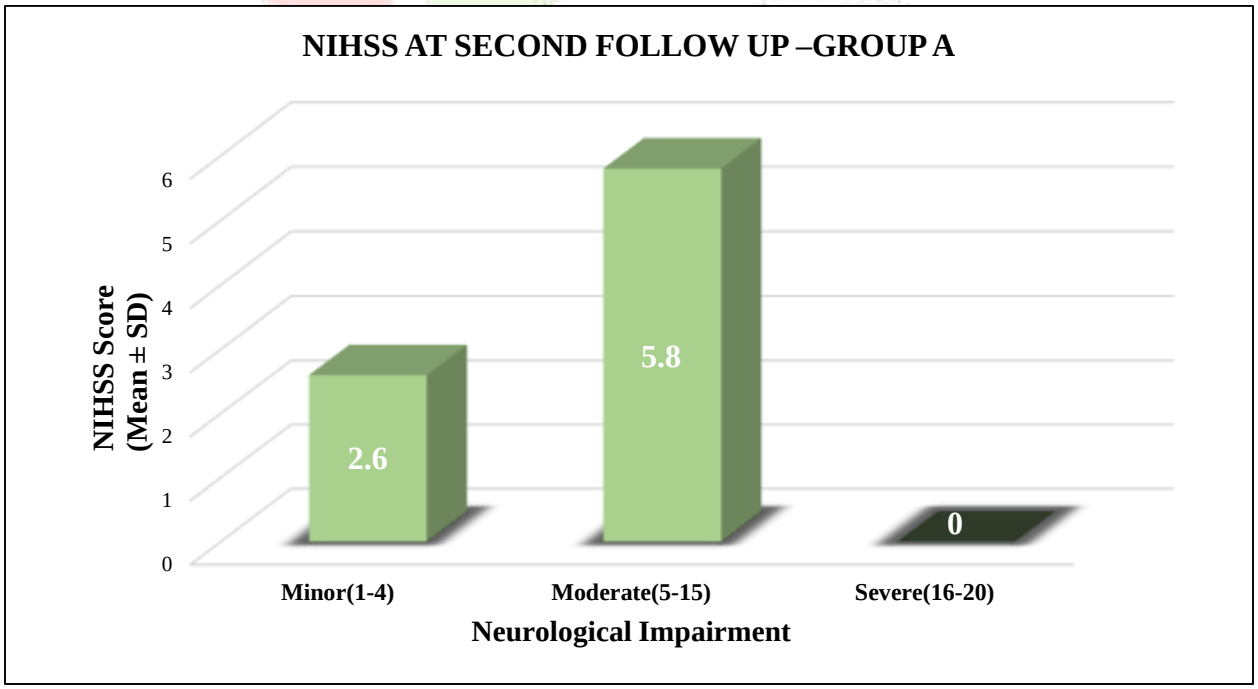


Figure: 8 NIHSS data at the second follow-up of GROUP A

THIRD FOLLOW-UP ASSESSMENT ON NEUROLOGICAL IMPROVEMENT OF GROUP A (ALTEPLASE):

Neurological impairment	No of patients (n=25)	NIHSS Score (Mean ± SD)
Minor (1-4)	24	1.79 ± 0.9
Moderate (5-15)	1	8
Severe (16-20)	0	0

Table: 9 NIHSS data at the Third follow-up of GROUP A

Table 10, shows the neurological impairment of group A at the time of third follow up 96% of patient had minor neurological impairment and NIHSS Score was 1.79±0.9 and 4% of patient had moderate neurological impairment and NIHSS score was 8.

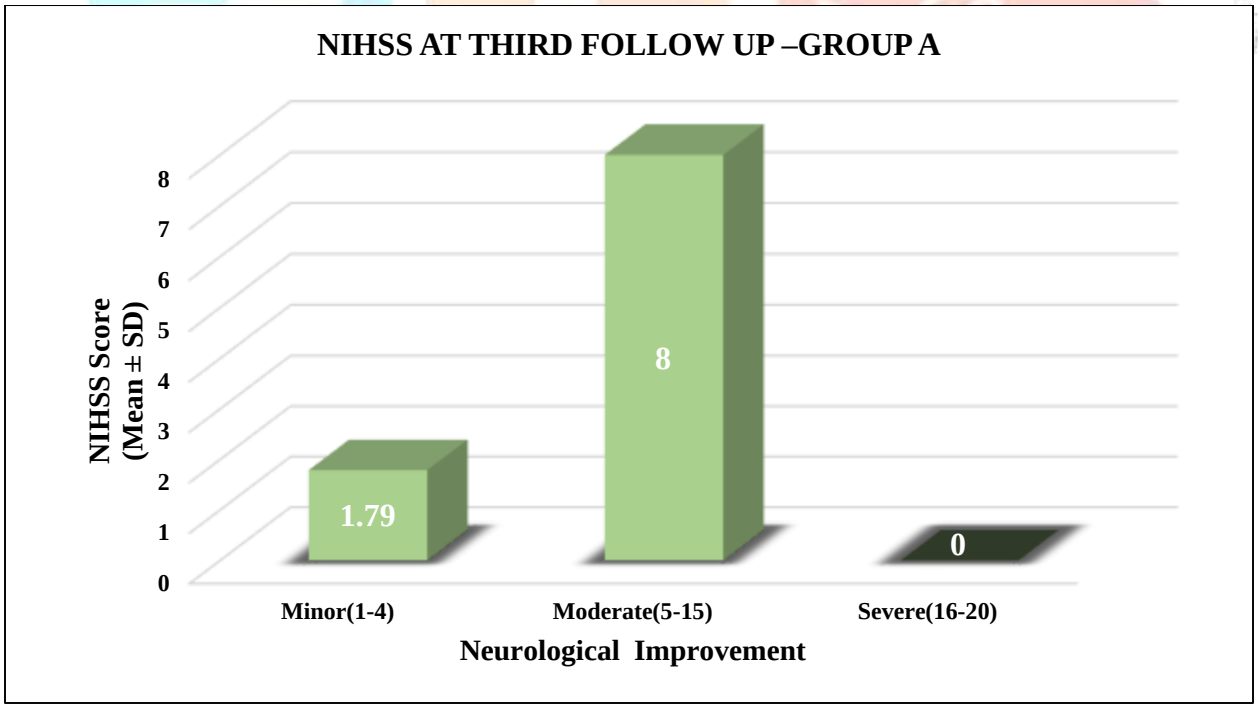


Table: 9 NIHSS data at the third follow-up of GROUP A

COMPARING THE NEUROLOGICAL STATUS DURING EACH FOLLOW UP:

FOLLOW UP	NIHSS Score (Mean ± SD)
Baseline	7.04 ± 3.1
First follow-up	5.08 ± 1.9
Second follow-up	3.44 ± 1.7
Third follow-up	2.04 ± 1.5*

**p value <0.05 was considered to be significant p value= <0.01*

Table: 10 Comparison between different follow-up of group A

When comparing the neurological status during each follow up the baseline score was 7.04±3.1 and during the next follow ups the NIHSS Score decreases respectively. The observed decline in mean NIHSS scores over time suggests a gradual recovery of neurological function in the stroke patients. The initial reduction in NIHSS scores between the baseline and first follow-up assessments likely reflects the immediate effects of medical interventions and acute rehabilitation. The subsequent decrease in NIHSS scores during the second and third follow-up evaluations indicates ongoing recovery and potential neurological restoration.

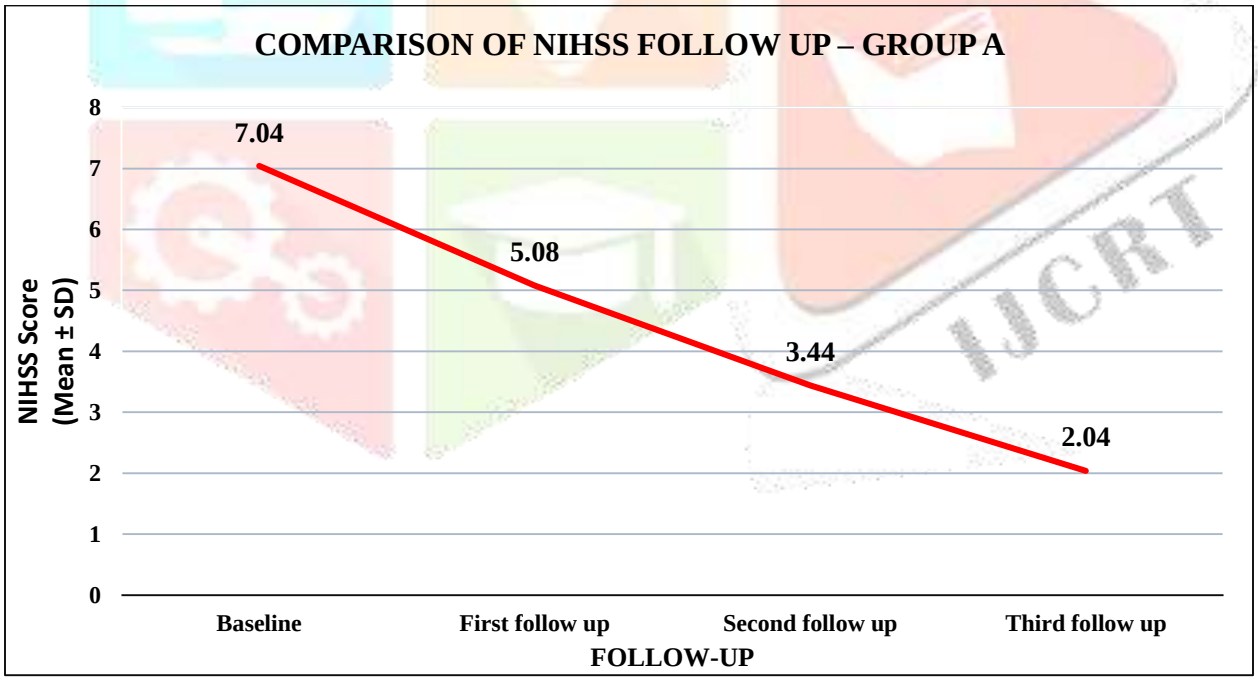


Figure: 10 Comparison of NIHSS score at different follow up of group A

NEUROLOGICAL IMPAIRMENT AT BASELINE GROUP B (TENECTEPLASE):

Neurological impairment	Number of patients (n=25)	NIHSS Score (Mean ± SD)
Minor (1-4)	3	4
Moderate (5-15)	21	7.14 ± 1.6
Severe (16-20)	1	16

Table: 11 Neurological impairments at Baseline Group-B

Table 11 , shows the neurological impairment of group B at the time of admission were 84% of patient had moderate neurological impairment and NIHSS Score was 7.14±1.6 and 12% of patient had moderate neurological impairment and NIHSS score was 4, the mean NIHSS score for this group was 4, suggesting minimal impact on their neurological function.and 4% of patient had severe neurological impairment and NIHSS Score was 16, this individual experienced a substantial and debilitating impact on their neurological function.

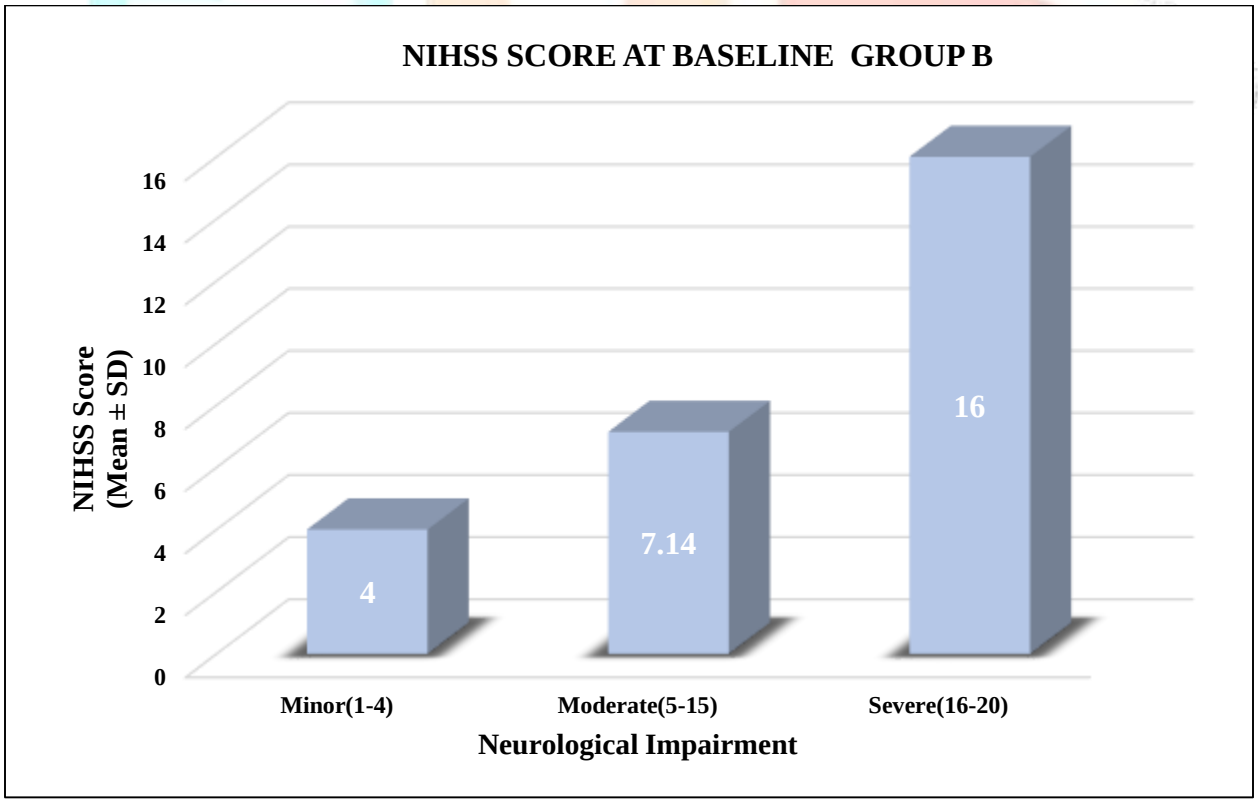


Figure: 11 Neurological impairments at Baseline of Group B

FIRST FOLLOW UP- ASSESSMENT OF NEUROLOGICAL IMPROVEMENT OF GROUP B (TENECTEPLASE):

Neurological impairment	Number of patients (n=25)	NIHSS score (Mean ± SD)
Minor (1-4)	9	3 ± 0.7
Moderate (5-15)	16	6.13 ± 1.2
Severe (16-20)	0	0

Table:12 Neurological Improvement at first follow up of Group B

Table 12, shows the neurological impairment of group B at the time of first follow up 64% of patient had moderate neurological impairment and NIHSS Score was 6.13±12 and 36% of patient had minor neurological impairment and NIHSS score was 3±0.7.

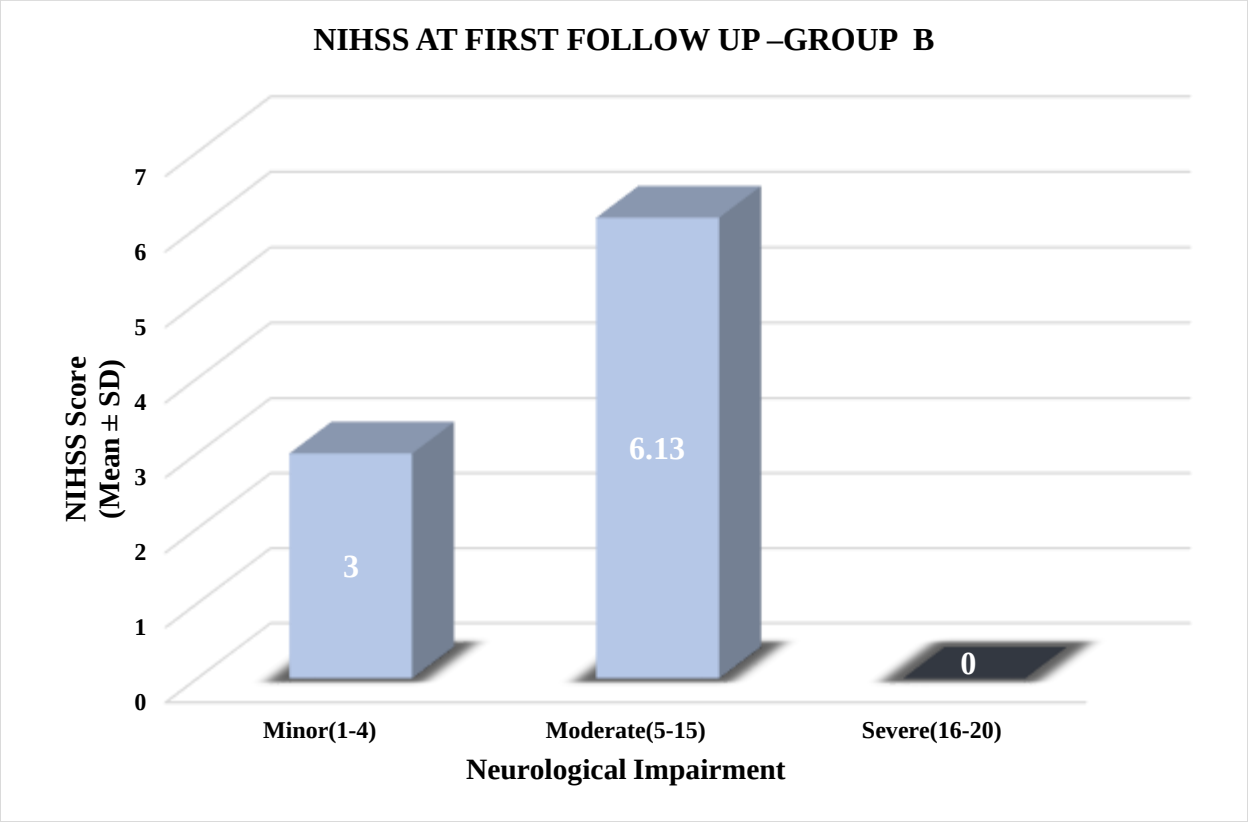


Figure:12 Neurological Improvement at First follow-up of Group B

SECOND FOLLOW UP- ASSESSMENT OF NEUROLOGICAL IMPROVEMENT OF GROUP B (TENECTEPLASE):

Neurological impairment	Number of patients (n=25)	NIHSS score (Mean ± SD)
Minor (1-4)	21	2.4 ± 1.1

Moderate (5-15)	4	5.5 ± 0.5
Severe (16-20)	0	0

Table: 13 Neurological Improvement at Second follow up of Group B

Table 14, shows the neurological impairment of group B at the time of second follow up 84% of patient had minor neurological impairment and NIHSS Score was 2.4±1.1 and about 16% of patient had moderate neurological impairment and NIHSS Score was 5.5±0.5.

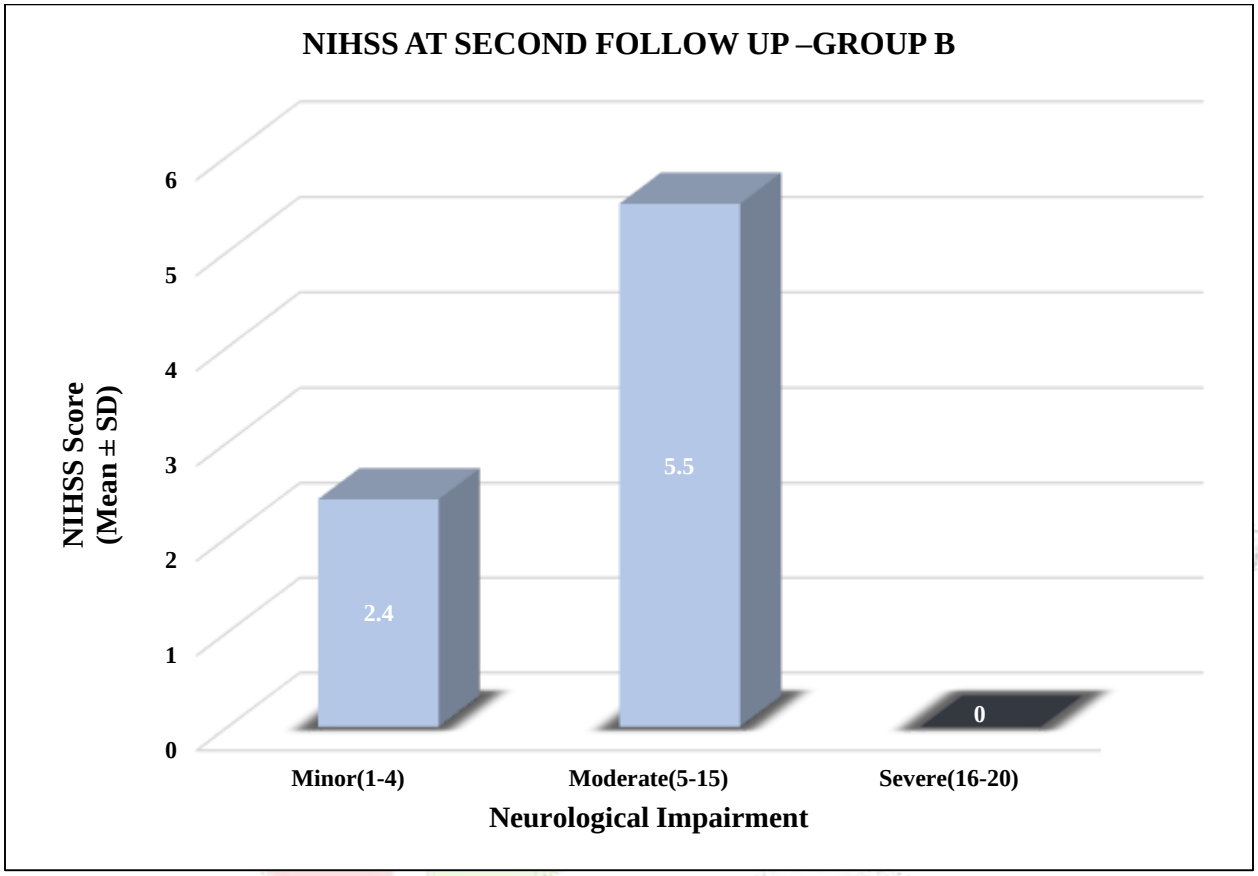


Figure: 13 Neurological improvements at Second Follow-up of Group B

THIRD FOLLOW UP- ASSESSMENT OF NEUROLOGICAL IMPROVEMENT OF GROUP B (TENECTEPLASE):

Neurological impairment	Number of patients (n=25)	NIHSS score (Mean ± SD)
Minor (1-4)	25	1.3 ± 1.1
Moderate (5-15)	0	0
Severe (16-20)	0	0

Table:14 Neurological improvements at Third follow up of Group B

Table 15, shows the neurological impairment of group B at the time of third follow up 100% of patient had minor neurological impairment and NIHSS Score was 1.3±1.1.

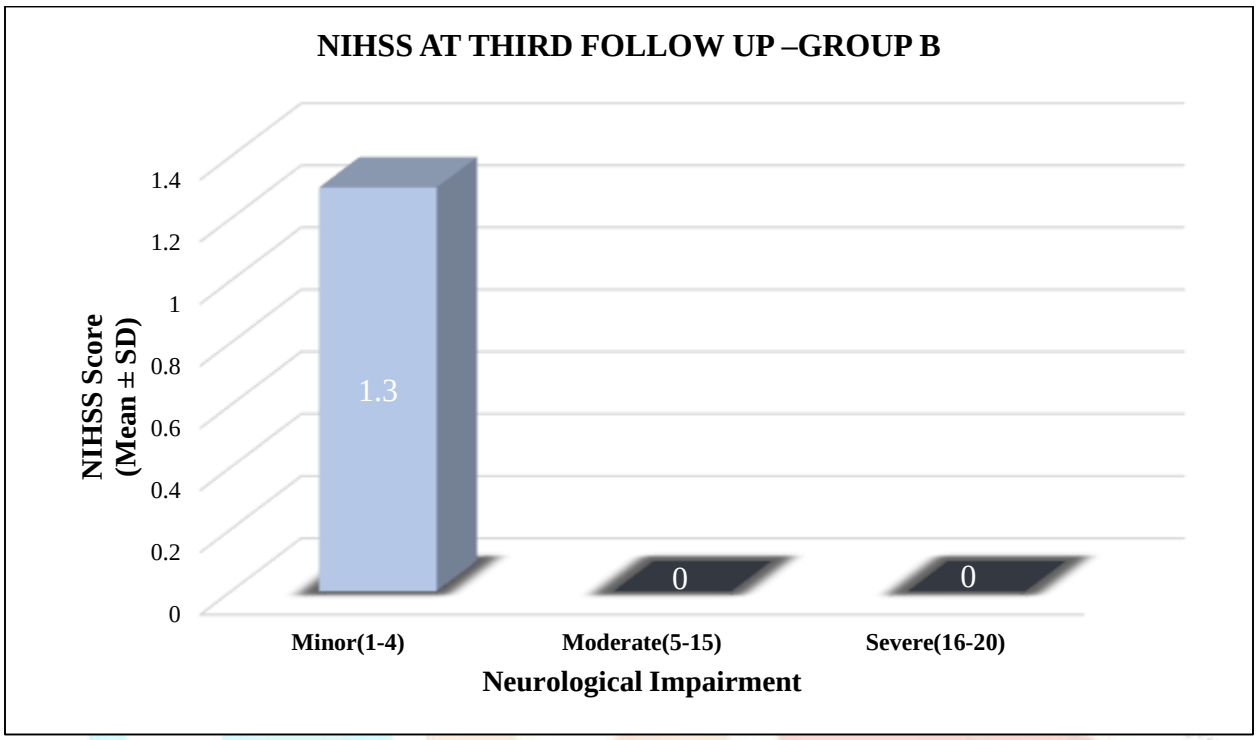


Figure: 14 Neurological impairments at Third Follow-up

COMPARING THE NEUROLOGICAL STATUS DURING EACH FOLLOW UP OF GROUP B:

FOLLOW UP	NIHSS Score (Mean ± SD)
Baseline	7.1 ± 2.6
First follow-up	5 ± 1.8
Second follow-up	2.9 ± 1.5
Third follow-up	1.3 ± 1.1*

p value <0.05 was considered to be significant p value= <0.01

Table: 15 Comparison of NIHSS scores at different follow up of Group B

When comparing the neurological status during each follow up the baseline score was 7.1±2.6 and during the first follow up the NIHSS Score was5±1.8 and from the second follow up it decreases respectively.

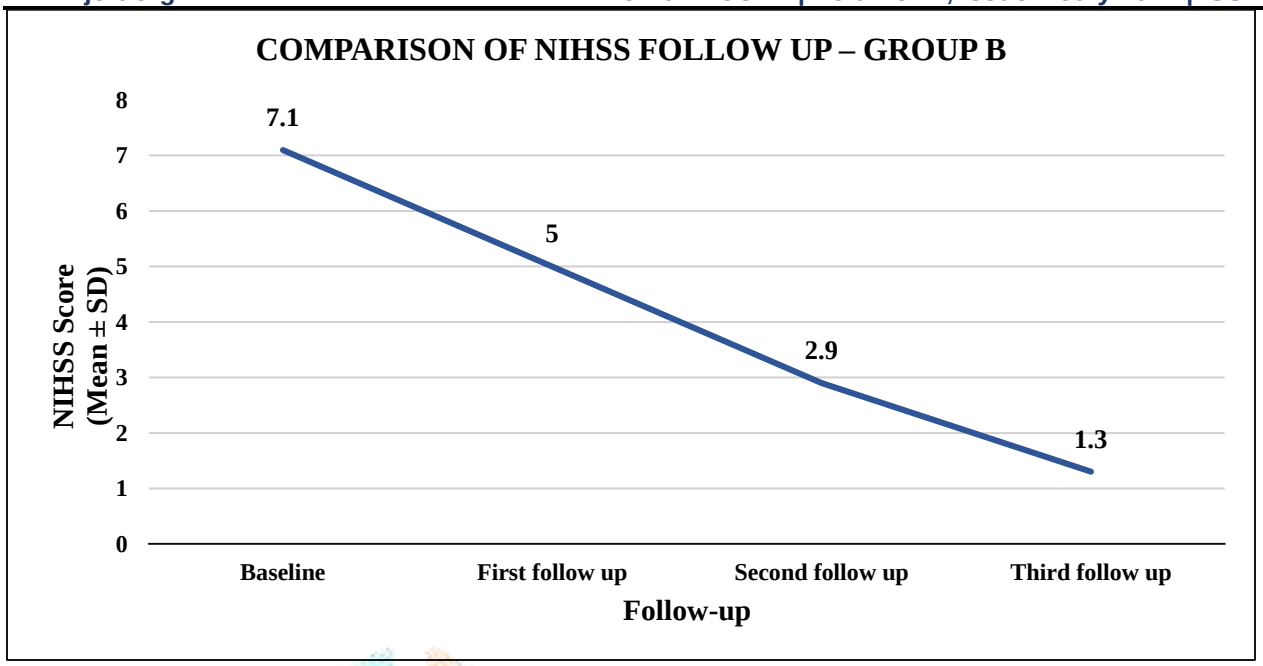


Figure: 15 Comparison of NIHSS score at different follow up of Group B

COMPARISON OF NIHSS SCORE OF BOTH GROUP A & B:

GROUPS	BASE LINE	END LINE
ALTEPLASE	7.04 ± 3.1	2.04 ± 1.5*
TENECTEPLASE	7.1 ± 2.6	1.3 ± 1.1*

p value <0.05 was considered to be significant p value= <0.01

Table: 16 Comparison of NIHSS score of both Groups

Table 17, shows the comparison of NIHSS Score of both A and B Groups. On evaluating, the NIHSS Score of Alteplase attained at beginning was 7.04± 3.1 and at the end of the study 2.04 ± 1.5 and NIHSS Score of Tenecteplase attained at beginning was 7.1 ± 2.6 and at end of study 1.3 ± 1.1. This difference in end line NIHSS scores between the two groups may suggest that Tenecteplase is more effective than Alteplase in improving neurological function in stroke patients.

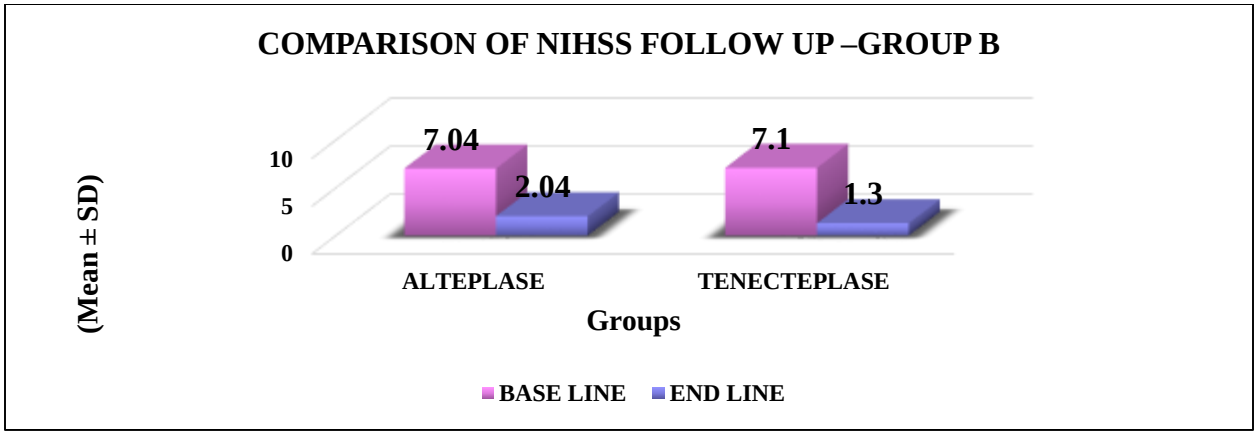


Figure: 16 Comparison of NIHSS score of both Groups

ASSESMENT ON EFFECT OF ALTEPLASE:

MRS SCORE AT BASELINE OF GROUP A (ALTEPLASE):

MRS SCORE	Number of patients (n=25)	Percentage (%)
0- No symptoms at all	0	0%
1 -No significant disability	2	8%
2 -Slight disability	4	16%
3 -Moderate disability	11	44%
4-Moderately severe disability	7	28%
5- severe disability	1	4%
6-Dead	0	0%

Table:17 MRS Score at the time of admission -Group A

Table 18, shows the MRS score of group A at the time of admission, were 44% of the patient had MRS score of 3 with moderate disability, and 28% of the patients had the MRS score of 4 with moderately severe disability, and 16% of patients had MRS score of 2 with slight disability, and 8% of patient had MRS score of 1 with no significant disability and 4% of the patients had MRS score of 5 with severe disability.

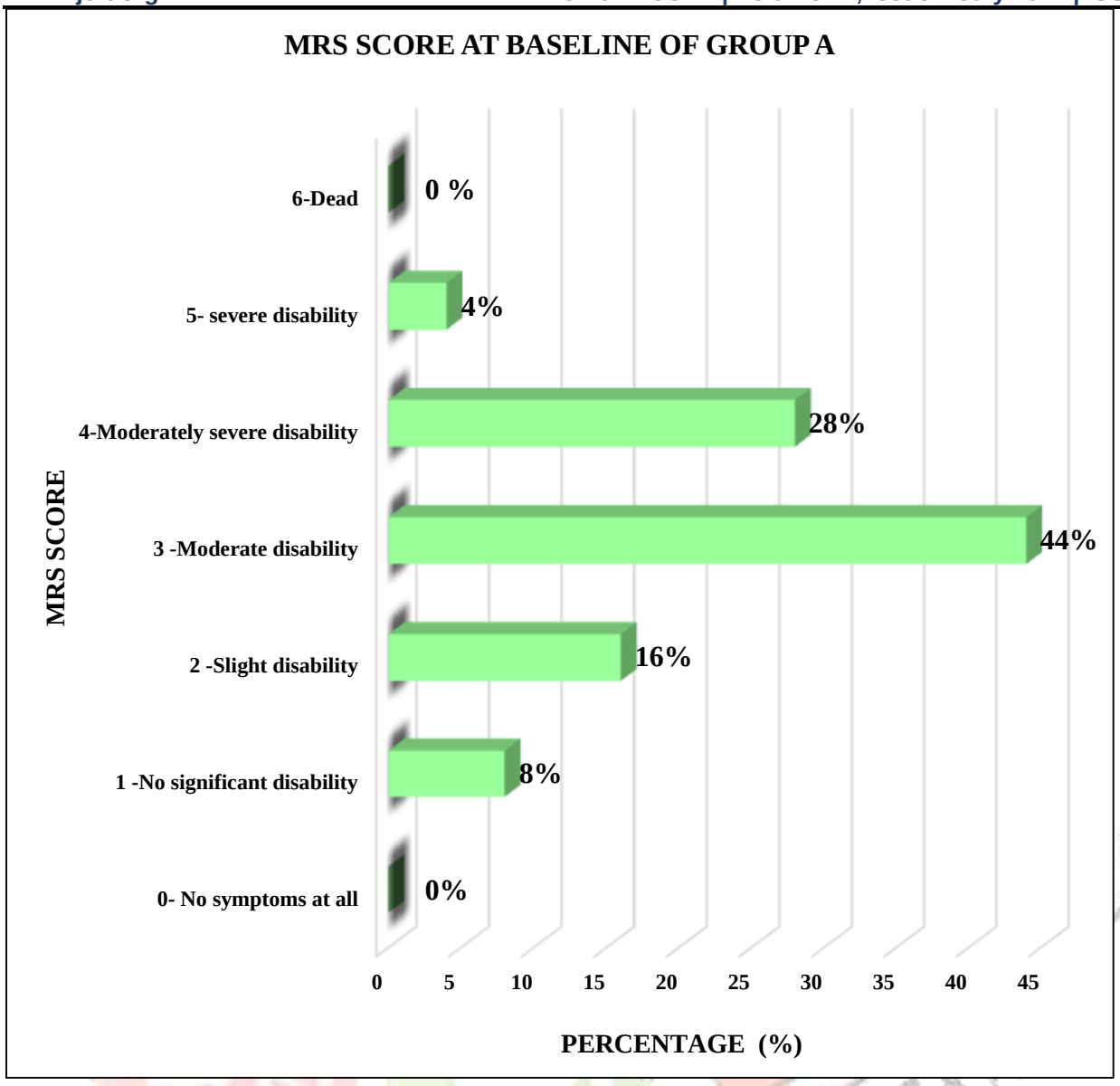


Table: 17 MRS Score at the time of admission -Group A

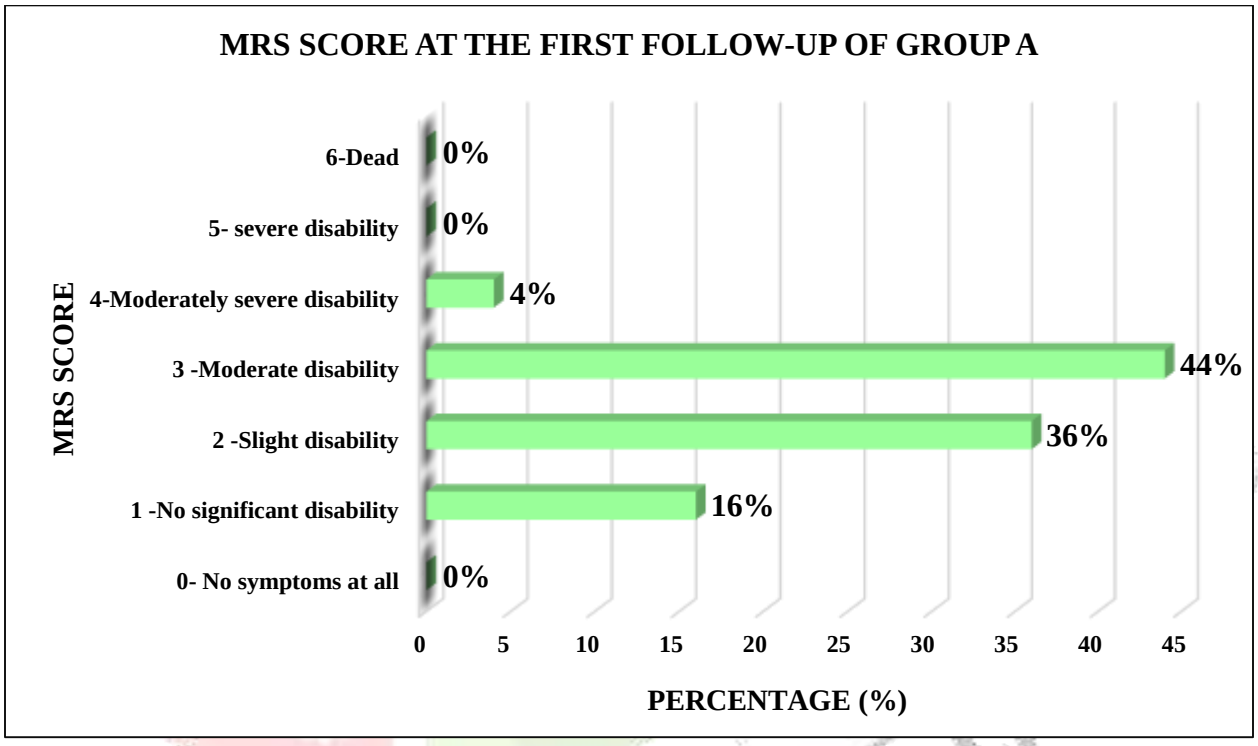
MRS SCORE AT THE FIRST FOLLOW-UP OF GROUP A:

MRS SCORE	Number of patients (n=25)	Percentage (%)
0- No symptoms at all	0	0%
1 -No significant disability	4	16%
2 -Slight disability	9	36%
3 -Moderate disability	11	44%

4-Moderately severe disability	1	4%
5- severe disability	0	0%
6-Dead	0	0%

Table:18MRS Score at First Follow-up of Group A

Table 19, shows the MRS score of group A at the time of first follow up, were 44% of patients had MRS score of 3 with moderate disability, and 36% of patients had MRS score of 2 with slight disability, and 16% of patients had MRS score of 1 with no significant disability and 4% had MRS score of 4 with moderately severe disability.



MRS SCORE	Number of patients (n=25)	Percentage (%)
0- No symptoms at all	5	20
1 -No significant disability	11	44
2 -Slight disability	9	36
3 -Moderate disability	0	0
4-Moderately severe disability	0	0
5- Severe disability	0	0
6-Dead	0	0

Table: 18 MRS Score First Follow-up of group A

MRS SCORE AT THE SECOND FOLLOW-UP OF GROUP A:

Table:19 MRS Score at Third Follow-up of Group A

Table 19, shows the MRS score of group A at the second follow up, were 40% had MRS score of 1 with no significant disability, and 40% had MRS score of 2 with slight disability, and 12% had MRS score of 3 with moderate disability, and 8% had MRS score of 2 with free of symptoms.

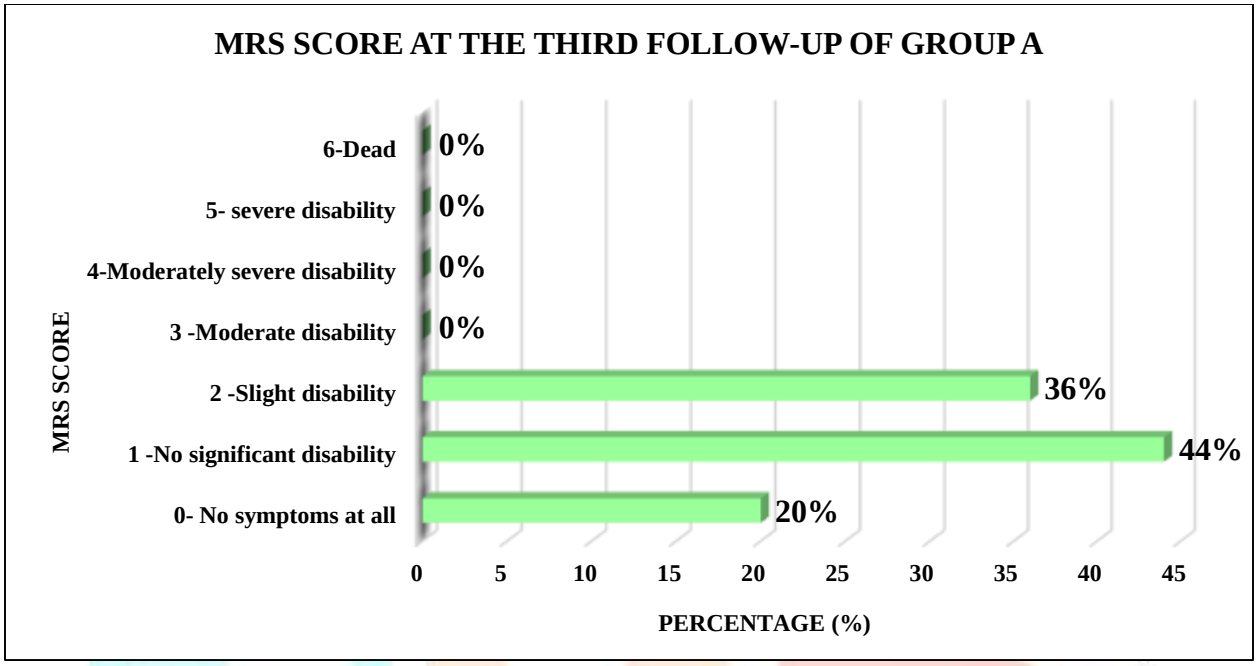


Figure:19 MRS Score at Third Follow-up of Group A

MRS SCORE AT THE THIRD FOLLOW-UP OF GROUP A:

MRS SCORE	Number of patients (n=25)	Percentage (%)
0- No symptoms at all	5	20
1 -No significant disability	11	44
2 -Slight disability	9	36
3 -Moderate disability	0	0
4-Moderately severe disability	0	0
5- Severe disability	0	0
6-Dead	0	0

Table:20 MRS Score at Third Follow-up of Group A

Table 21, shows the MRS score of group A at the third follow up, were 44% of patients had MRS score of 1 with no significant disabilities, and 36% of patients had MRS score of 2 with slight disability, and 20 % of patients had MRS score of 0 with free of symptoms.

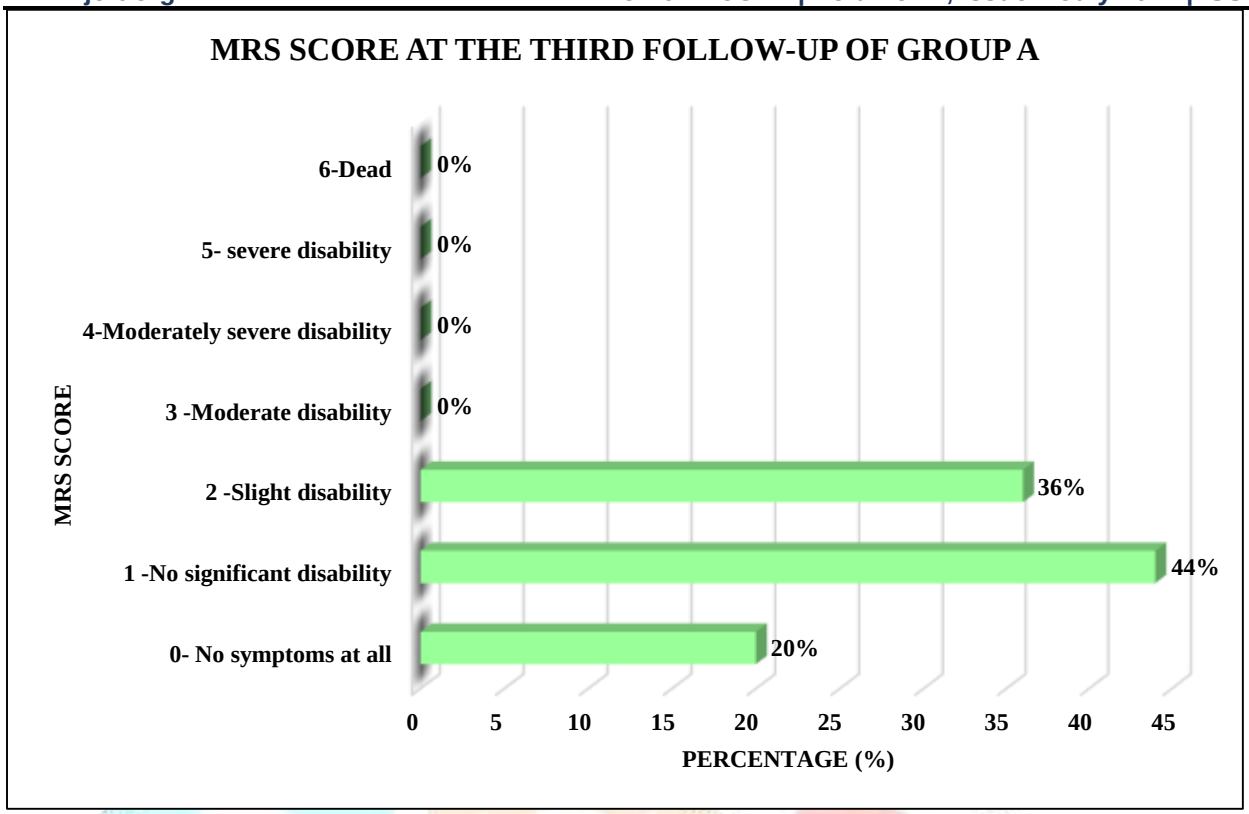


Figure:20 MRS Score at Third Follow-up of Group A

COMPARING THE MRS SCORE DURING EACH FOLLOW-UP OF GROUP A (ALTEPLASE):

FOLLOW-UP	MRS Score (Mean ± SD)
Baseline	3.04 ± 0.9
First follow-up	2.36 ± 0.8
Second follow-up	1.5 ± 0.8
Third follow-up	1.1 ± 0.7*

p value <0.05 was considered to be significant p value= <0.01

Table: 21 Comparison of MRS Scores at different follow up of Group A

Table 21, shows the comparison of MRS score between each follow ups of group A, were the MRS score is 3.04±0.9 at baseline, however it drops with the successive follow-ups.

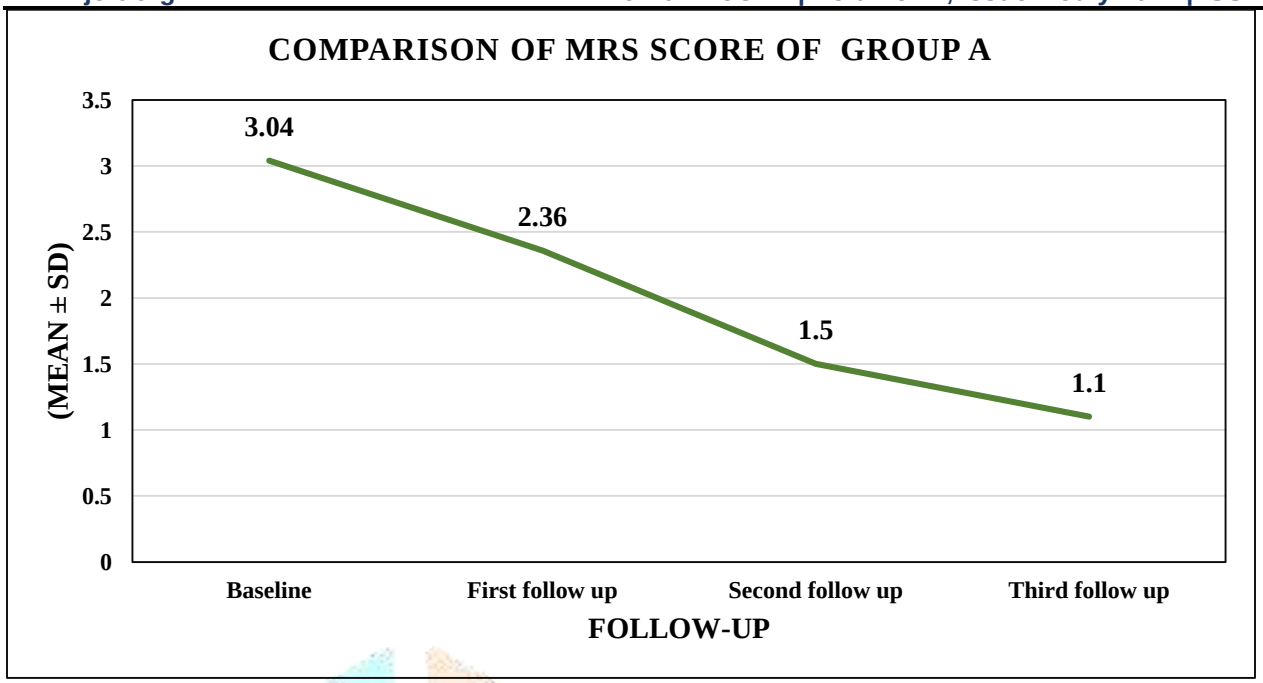


Figure: 22 Comparison of MRS scores at different follow up of Group A

ASSESMENT ON EFFECT OF TENECTEPLASE:

MRS SCORE AT BASELINE OF GROUP B:

MRS SCORE	Number of patients (n=25)	Percentage (%)
0- No symptoms at all	0	0%
1 -No significant disability	2	8%
2 -Slight disability	2	8%
3 -Moderate disability	14	56%
4-Moderately severe disability	7	28%
5- Severe disability	0	0%
6-Dead	0	0%

Table: 22 MRS Score at Baseline -Group B

Table 22, shows the assessment on effect of Tenecteplase at the time of admission using MRS score, were 56% of patients had MRS score of 3 with moderate disability, and 28% of patients were having MRS score of 4 with moderately severe disability, and 8% of patients had MRS score of 2 with slight disability, and 8% of patients had MRS score of 1 with no significant disability.

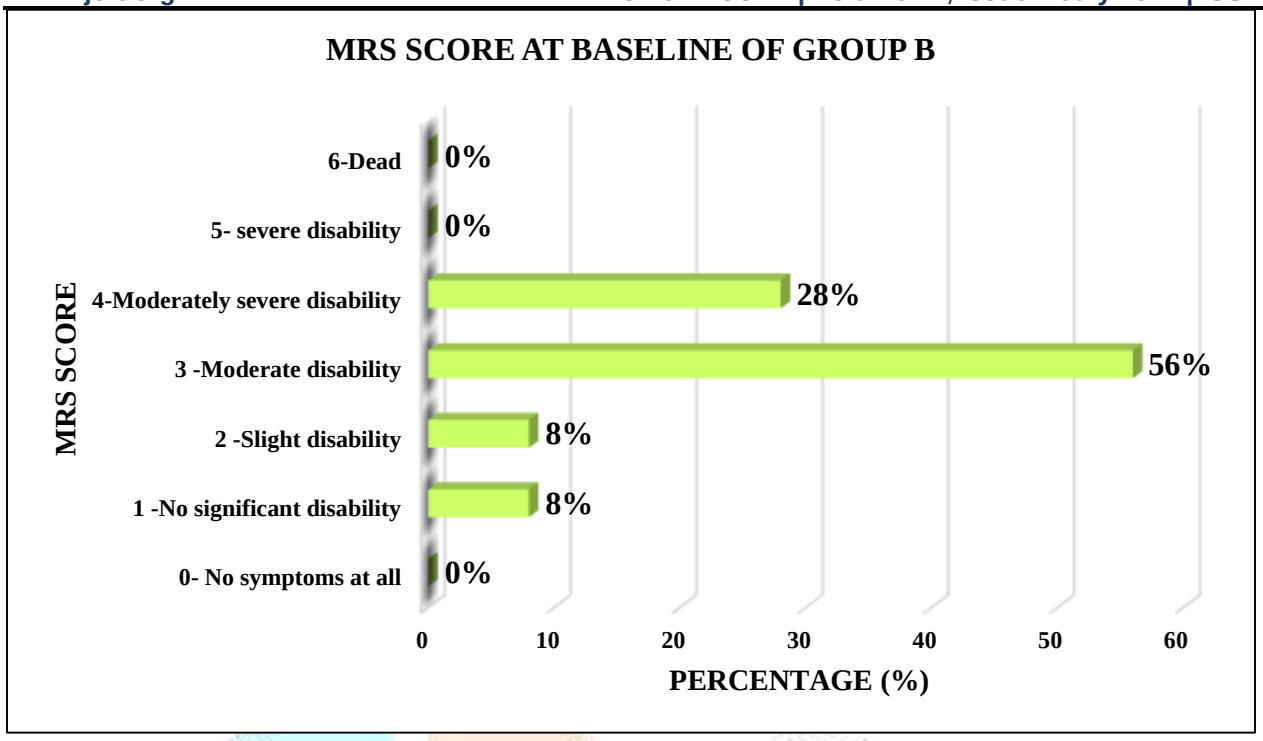


Table: 23 MRS Score at Baseline -Group B

MRS SCORE AT THE FIRST FOLLOW-UP OF GROUP B:

MRS SCORE	Number of patients (n=25)	Percentage (%)
0- No symptoms at all	0	0%
1 -No significant disability	9	36%
2 -Slight disability	8	32%
3 -Moderate disability	7	28%
4-Moderately severe disability	1	4%
5- Severe disability	0	0%
6-Dead	0	0%

Table:24 MRS Score at First Follow-up of Group B

Table 24, shows the initial follow up for group B using MRS score. Were 36% had MRS score of 1 with no significant disability, and 32% had MRS score of 2 with slight disability, and 28% had MRS score of 3 with moderate disability and 4% had MRS score of 4 with moderately severe disability.

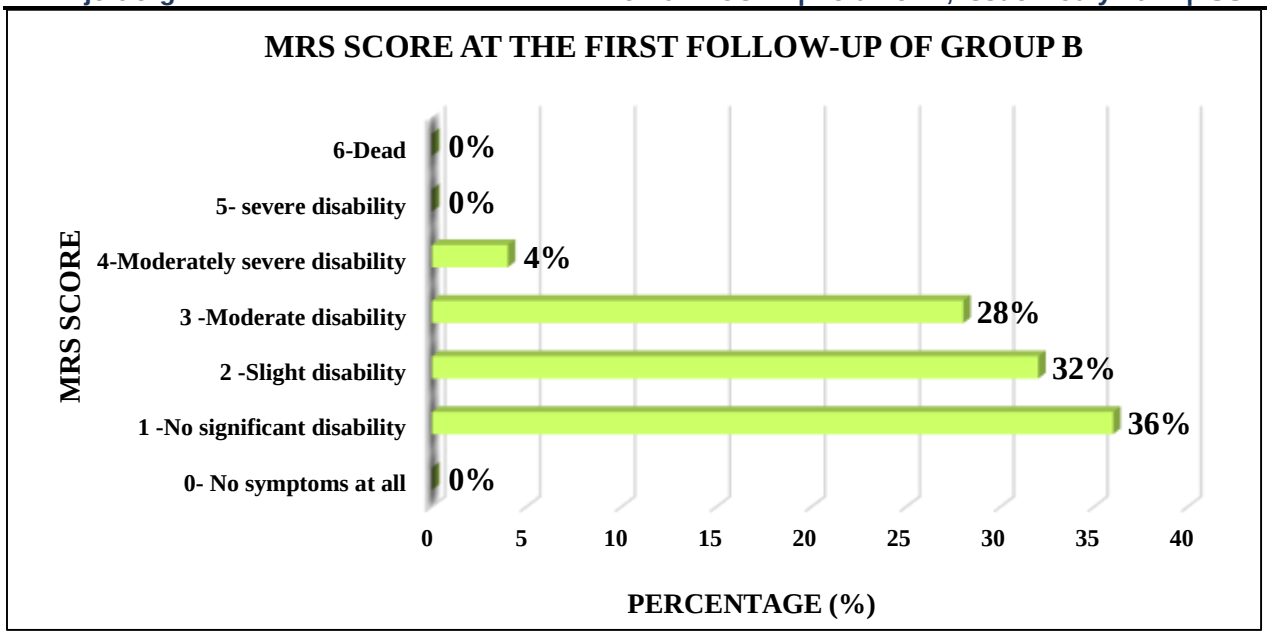


Table: 24 MRS Score at First Follow-up of group B

MRS SCORE AT THE SECOND FOLLOW-UP OF GROUP B:

MRS SCORE	Number of patients (n=25)	Percentage (%)
0- No symptoms at all	12	48%
1 -No significant disability	5	20%
2 -Slight disability	7	28%
3 -Moderate disability	1	4%
4-Moderately severe disability	0	0%
5- Severe disability	0	0%
6-Dead	0	0%

Table:25 MRS Score at Second Follow-up of Group B

Table 25, shows the second follow up of group B using MRS score, were 48% had MRS score of 0 with free of symptoms, 28% had MRS score of 2 that is with slight disability, 20% had MRS score 1 with no significant disability, 4% had MRS score of 3 with moderate disability.

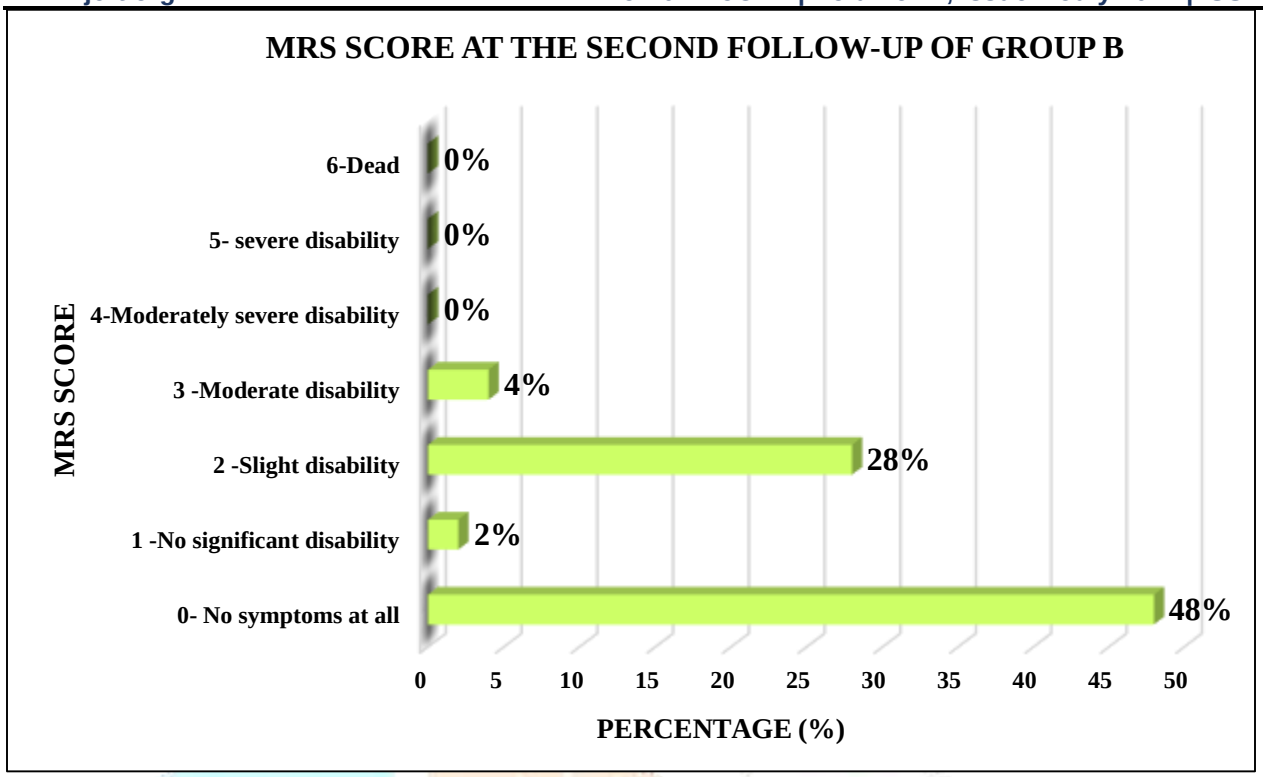


Figure:25 MRS Score at Second Follow-up of Group B

MRS SCORE AT THE THIRD FOLLOW-UP OF GROUP B:

MRS SCORE	Number of patients (n=25)	Percentage (%)
0- No symptoms at all	16	64%
1 -No significant disability	6	24%
2 -Slight disability	3	12%
3 -Moderate disability	0	0%
4-Moderately severe disability	0	0%
5- Severe disability	0	0%
6-Dead	0	0%

Table:26 MRS Score at Third Follow-up of Group B

Table 26 shows, the third follow up of group B using MRS score, were 64% had MRS score of 0 with free of symptoms, and 24% had MRS score of 1 with no significant disability, and 12% had MRS score of 2 with slight disability which indicates a good improvement in patients of group B.

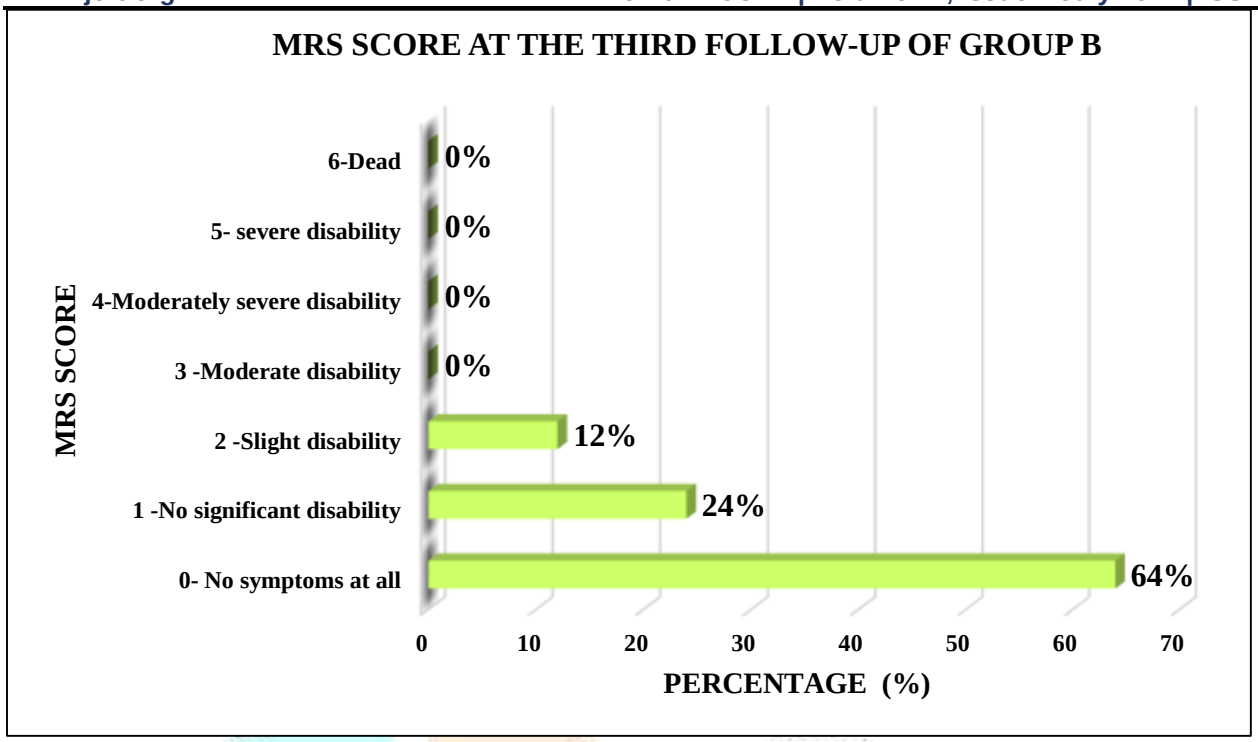


Figure:26 MRS Score at Third Follow-up of Group B

COMPARING THE MRS SCORE DURING EACH FOLLOW-UP OF GROUP B:

FOLLOW UP	MRS Score (Mean ± SD)
Baseline	3.04 ± 0.8
First follow-up	2 ± 0.9
Second follow-up	0.8 ± 0.9
Third follow-up	0.4 ± 0.7*

p value <0.05 was considered to be significant p value= <0.01

Table: 27 Comparison of MRS scores at different follow up of a Group B

Table 27 shows, using MRS scores each follow-up from group B was compared to each other were it shows MRS score of 3.04±0.8 and the scores declines during further follow ups respectively.

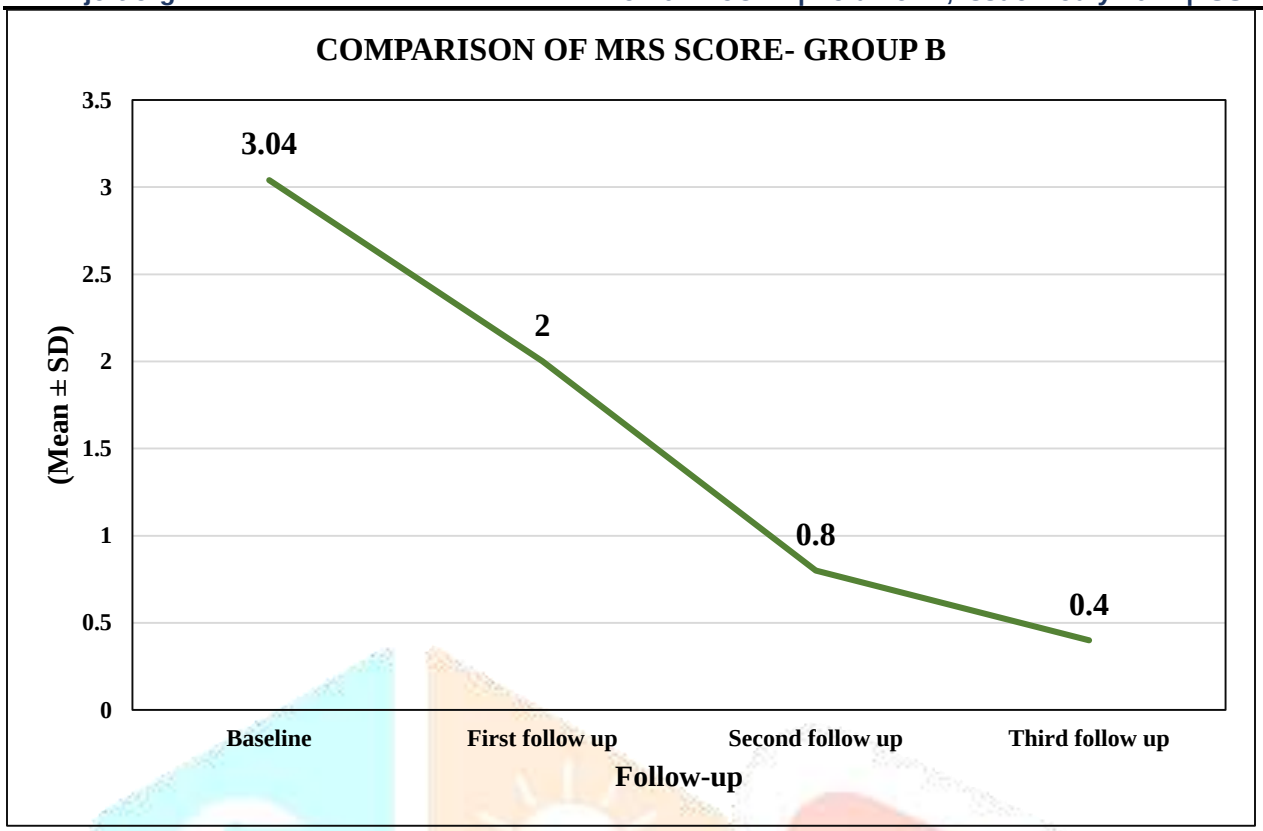


Figure: 27 Comparison of MRS scores at different follow up of a Group B

COMPARISON OF MRS SCORE OF BOTH GROUP A & B:

GROUPS	BASE LINE	END LINE
ALTEPLASE	3.04 ± 0.9	1.1 ± 0.7*
TENECTEPLASE	3.04 ± 0.8	0.4 ± 0.7*

p value <0.05 was considered to be significant p value= <0.01

Table: 28 Comparison of MRS score of both Groups

Table 28 shows, the comparison on MRS score of both group A and B. On assessment, the MRS Score of Alteplase obtained at beginning was 3.04±0.9 and at the end of the study the score obtained was 1.1± 0.7 and MRS Score of Tenecteplase obtained at beginning was 3.04 ± 0.8 and at the end of the study the score obtained was 0.4 ± 0.7

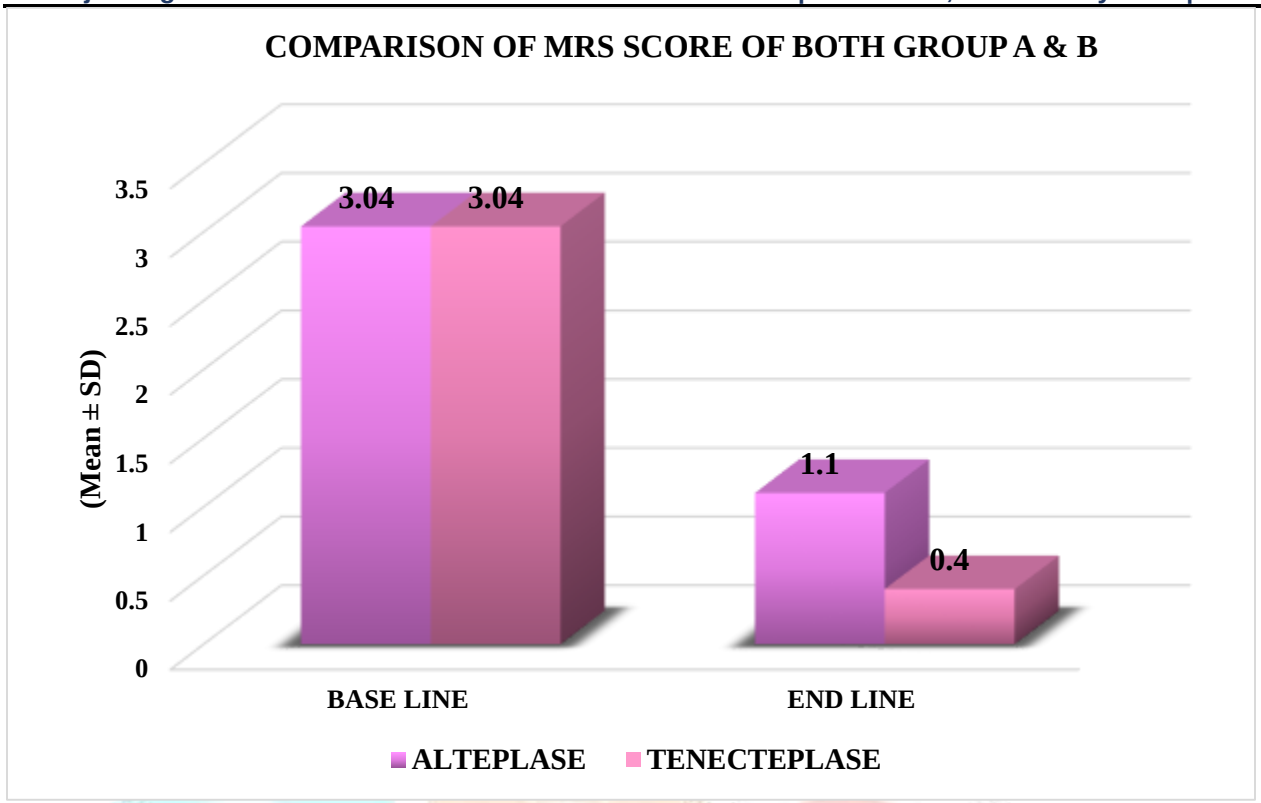


Figure:28 Comparison of MRS score of both Groups

ASSESSMENT ON QUALITY OF LIFE OF GROUP A (ALTEPLASE) BY USING STROKE-SPECIFIC QUALITY OF LIFE SCALE (SS-QOL):

FOLLOW UP	SS-QOL Score (Mean ± SD)
Baseline	75.6 ± 22.3
Second follow-up	118.4 ± 23.1
Third follow-up	158.9 ± 29.9**

p value <0.05 was considered to be significant p value= <0.001

Table: 29 Comparison of SS-QOL score of Group A

Table 29 shows, the assessment on the follow up of quality of life of Alteplase by using Stroke Specific Quality of Life Scale (SS-QOL). In the initial follow up the score was 75.6 ± 22.3 and increases in the subsequent follow ups 118.4 ± 23.1 and 158.9 ± 29.9. The observed difference was $p<0.001$ which is statistically significant($p<0.05$).

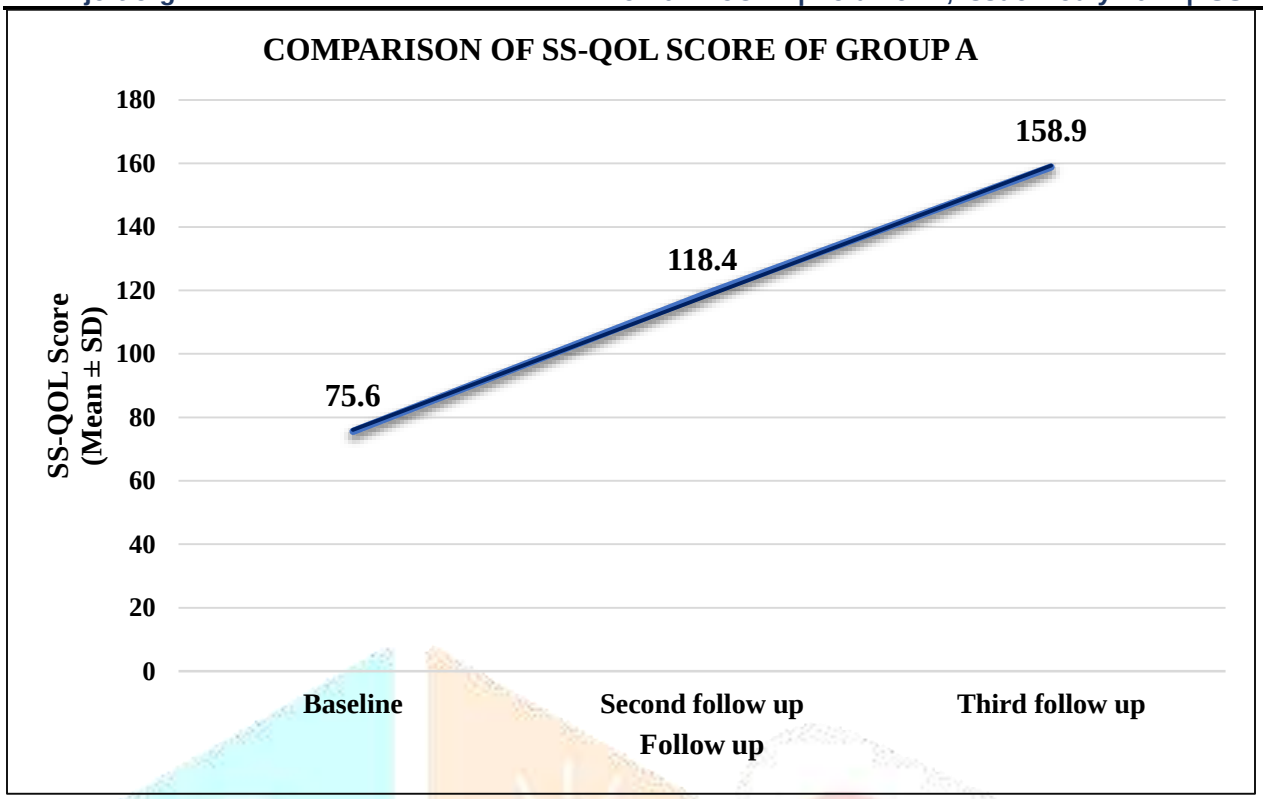


Figure: 29Comparison of SS-QOL score of Group B

ASSESSMENT ON QUALITY OF LIFE OF GROUP B (TENECTEPLASE) BY USING STROKE-SPECIFIC QUALITY OF LIFE SCALE (SS-QOL):

FOLLOW UP	SS-QOL Score (Mean ± SD)
Baseline	89.2 ± 22
Second follow-up	151 ± 18.1
Third follow-up	211.8 ± 11.9**

p value <0.05 was considered to be significant p value= <0.001

Table: 30 Comparison of SS-QOL score of Group B

Table 30 shows, the assessment on the follow ups of quality of life of Tenecteplase by using Stroke Specific Quality of Life(SS-QOL). In the initial follow up the score was 89.2±22 and increases in the subsequent follow ups151 ± 18.1 and 211.8 ± 11.9. The observed difference was $p<0.001$ which is statistically significant($p<0.05$).

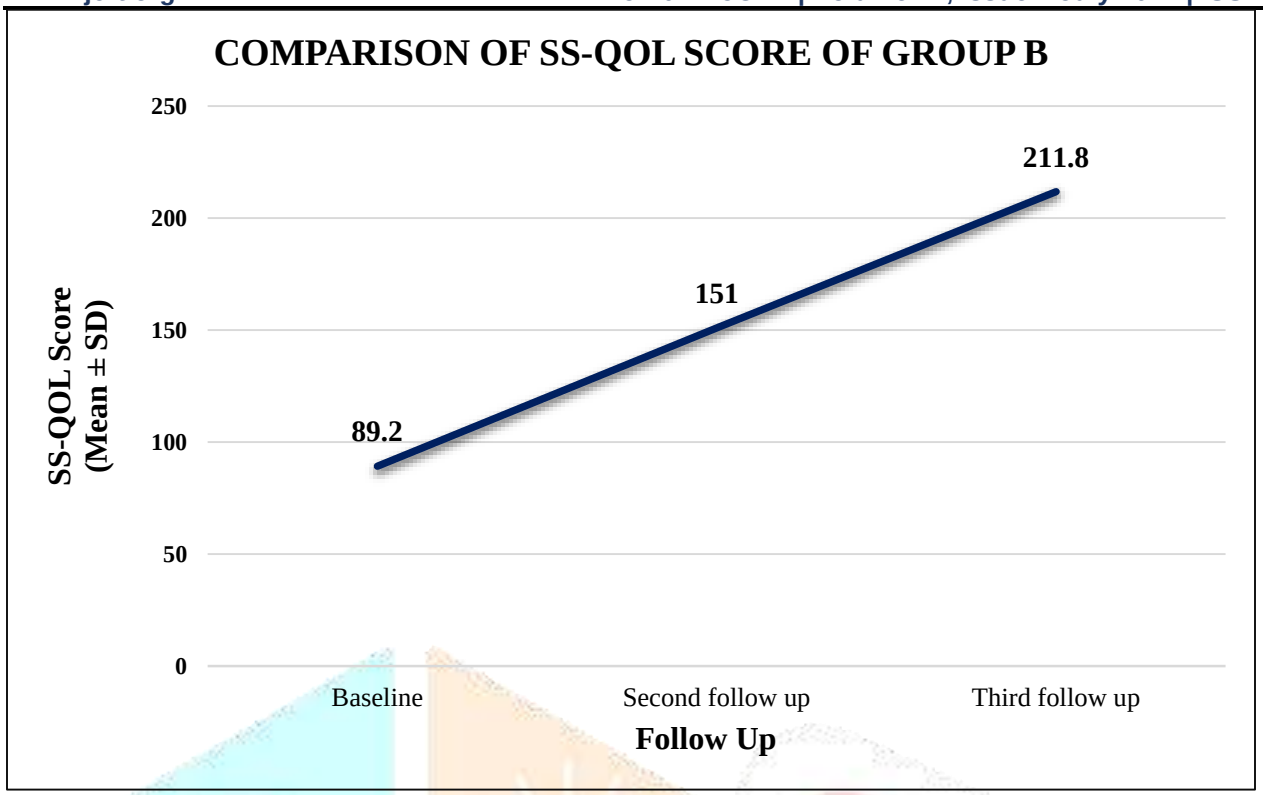


Figure: 30 Comparison of SS-QOL score of Group B

COMPARISON ON SS-QOL SCORE OF BOTH GROUPS A & B:

GROUPS	BASE LINE	END LINE
ALTEPLASE	75.6 ± 22.3	158.9 ± 29.9**
TENECTEPLASE	89.2 ± 22	211.8 ± 11.9**

p value <0.05 was considered to be significant p value= <0.001

Table: 31 Comparison on SS-QOL score of both Groups

Table 31 shows the comparison of SS-QOL of groups A and B. On assessment, the score of SS-QOL for group A obtained at the beginning was 75.6±22.3 and at the end of the study the score obtained was 158.9± 29.9 and for group B the score obtained at the beginning was 89.2±22 and at the end of the study the score obtained was 211.8±10.6.

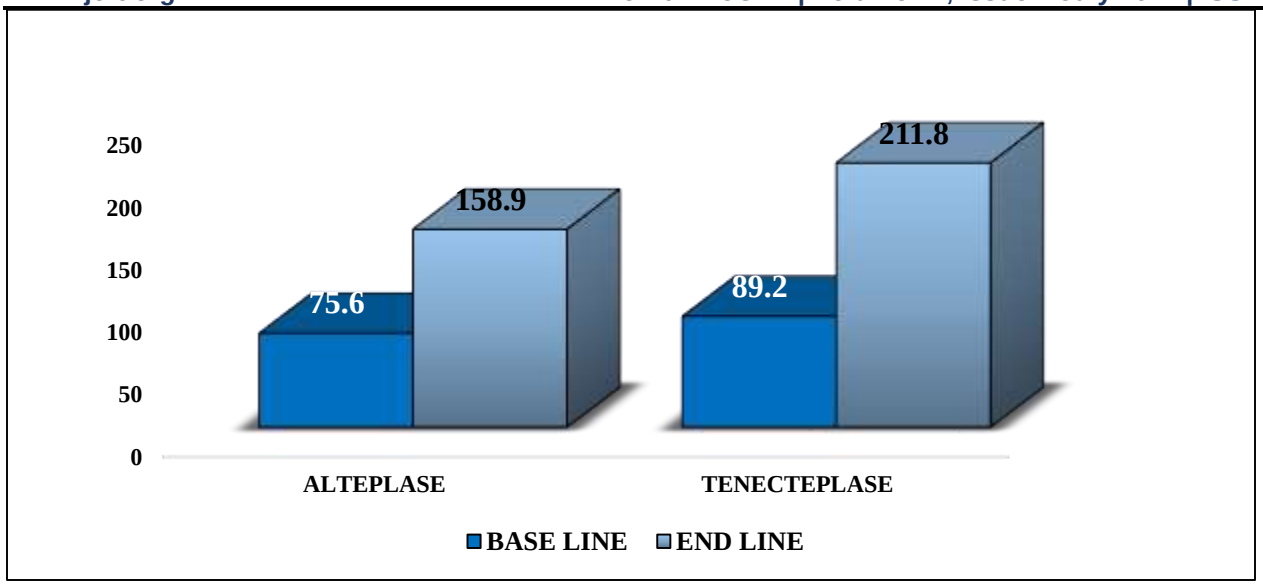


Figure: 31 Comparison on SS-QOL Score of both Groups

ASSESSMENT ON HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS) IN GROUP A (ALTEPLASE):

ASSESSMENT OF ANXIETY IN GROU P-A AT FIRST FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	ANXIETY score (Mean ± SD)
Normal (0-7)	0	0
Borderline (8-10)	4	8.7 ± 0.5
Abnormal (11-21)	21	14.8 ± 2.7

Table: 32 Assessment of Anxiety at First Follow-up in Group A

From table 32, it has been observed, the initial follow-up of anxiety level in group A using HADS scale. Where 16% patients had a borderline anxiety score 8.7± 0.5 and 84% patients having abnormal anxiety score 14.8±2.7 during the initial follow-up.

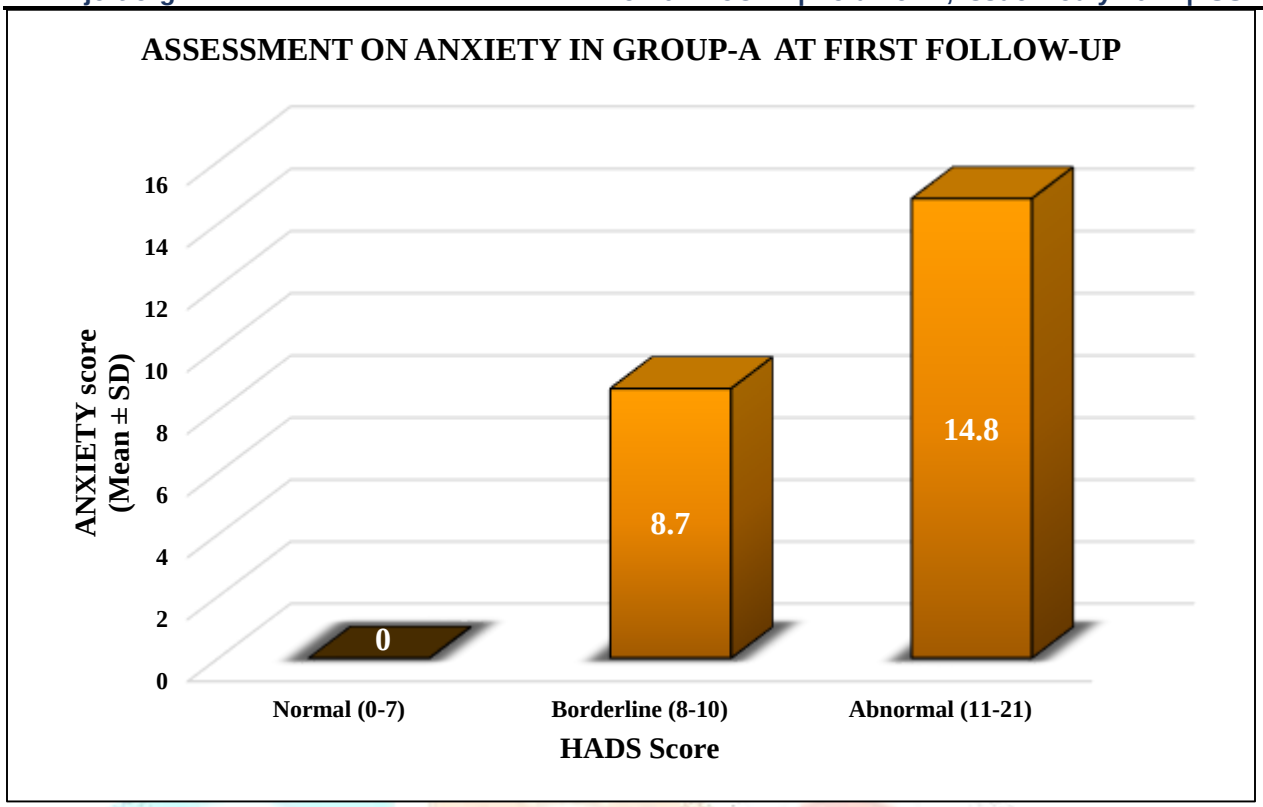


Figure: 32 Assessment on Anxiety at First Follow-up in Group A

ASSESSMENT OF ANXIETY IN GROUP-A AT SECOND FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	ANXIETY score (Mean ± SD)
Normal (0-7)	3	4.3 ± 0.5
Borderline (8-10)	10	8.5 ± 0.8
Abnormal (11-21)	12	11.9 ± 1.3

Table: 33 Assessment on Anxiety at Second Follow-up in Group A

Table 33 shows, the assessment of anxiety level in group A at second follow up were 48% of patients had an anxiety score of 11.9 ±1.3, indicating a high degree of anxiety, 40% have a borderline anxiety score of 8.5±0.8 and 12% of patients have normal anxiety score, which shows a slight improvement in the second follow up when compared with first follow up.

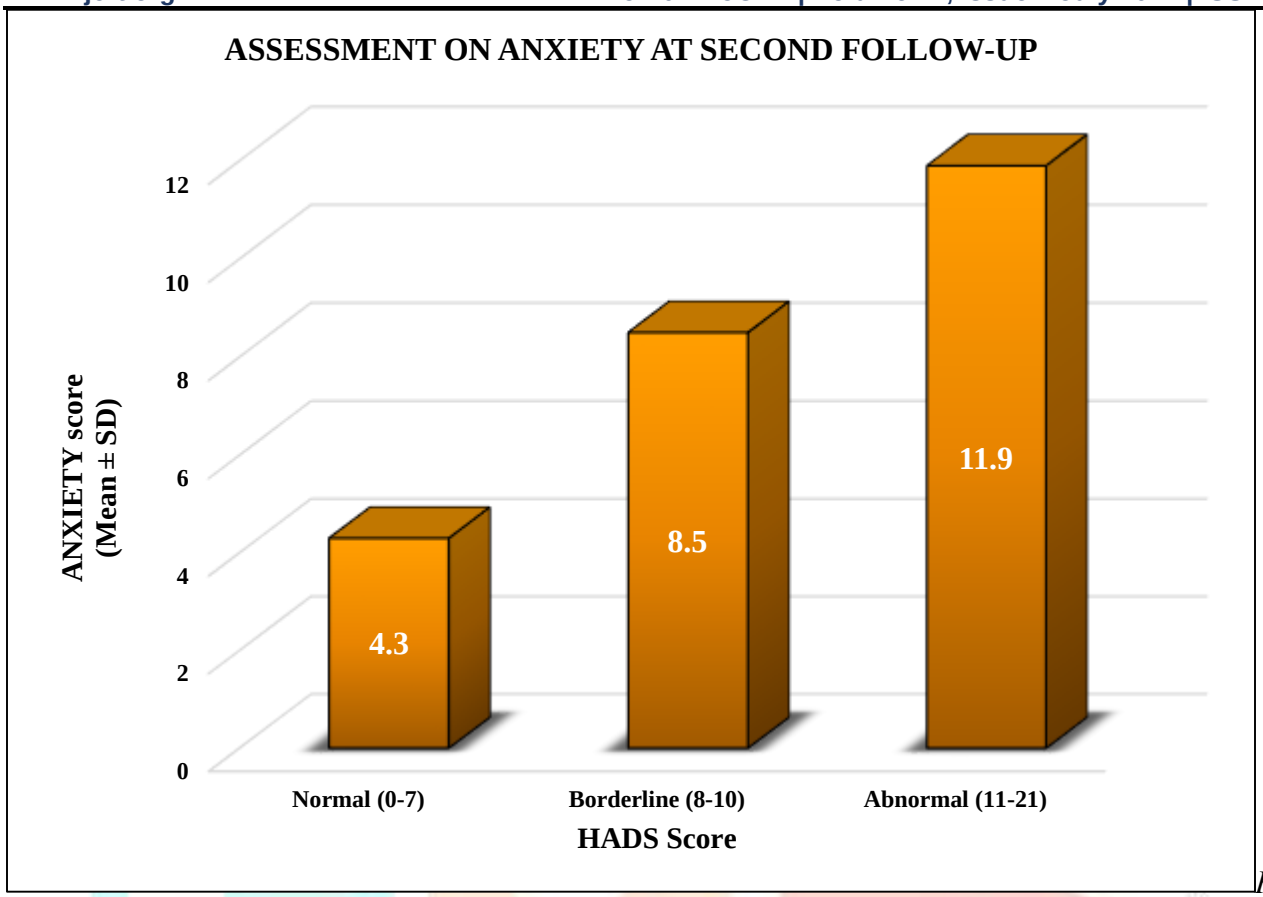


Figure: 33Assessment on Anxiety at Second Follow-up in Group B

ASSESSMENT ON ANXIETY IN GROUP-A AT THIRD FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	ANXIETY score (Mean ± SD)
Normal (0-7)	22	5 ± 1.5
Borderline (8-10)	3	8
Abnormal (11-21)	0	0

Table: 34 Assessment on Anxiety at Third Follow-up in Group A

From table 34, at the third follow-up, the level of anxiety in group A was evaluated and it was observed that 88% of the patients had an anxiety score of 5±1.5 and 12% of the patients had an anxiety score of 8 which, when compared to the earlier assessments, shows that the group A patients have improved more.

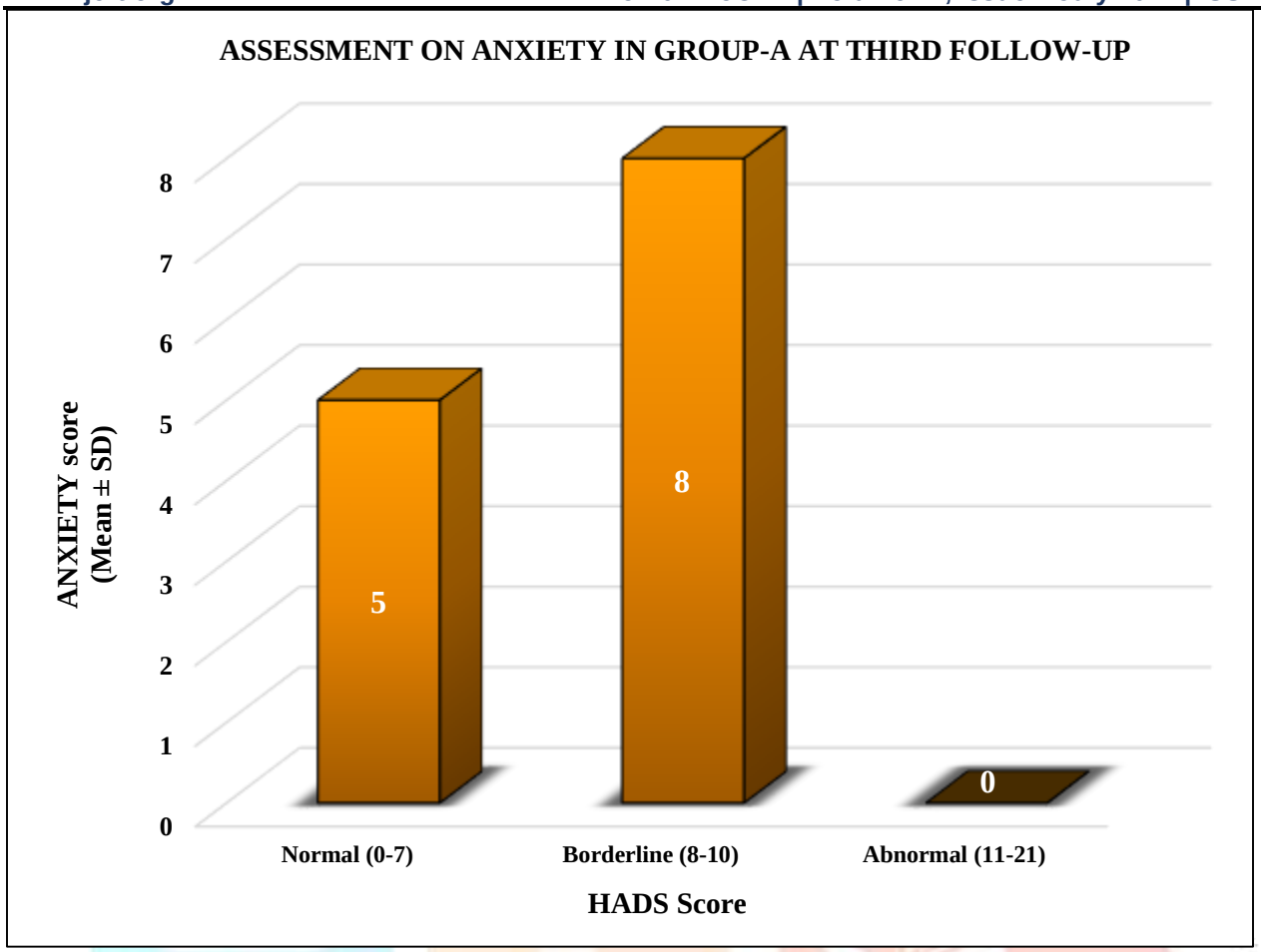


Figure: 34 Assessment on Anxiety at Third Follow-up in Group A

COMPARISON OF ANXIETY SCORE IN GROUP A:

FOLLOW UP	ANXIETY Score (Mean ± SD)
Baseline	13.8 ± 3.4
Second follow up	9.6 ± 2.7
Third follow up	5.5 ± 1.7*

**p value <0.05 was considered to be significant p value= <0.01*

Table: 35 Comparison of Anxiety in Group A

Table 35 shows, observations on the comparability of the anxiety score in group A were made in accordance with the reviews. The initial review shows the anxiety score of 13.8±3.4 and further declining in the subsequent follow ups.

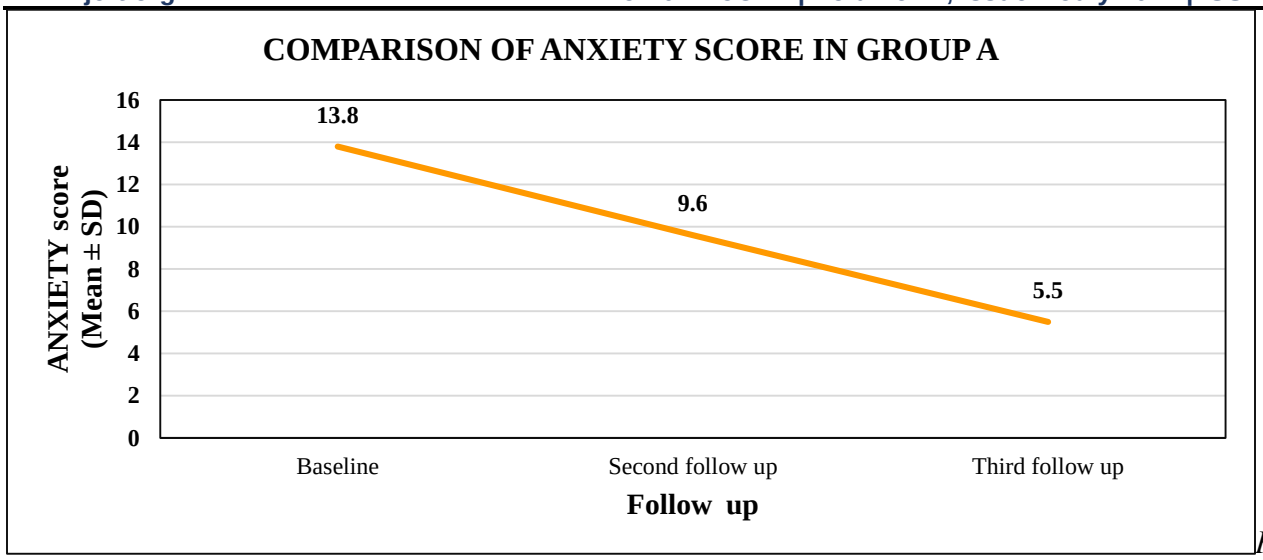


Figure: 35 Comparison of Anxiety in Group A

ASSESSMENT ON HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS) IN GROUP A(ALTEPLASE):

ASSESSMENT ON DEPRESSION IN GROUP-A AT FIRST FOLLOW UP:

HADS SCORE	Number of patients (n=25)	DEPRESSION Score (Mean ± SD)
Normal (0-7)	0	0
Borderline (8-10)	2	10
Abnormal (11-21)	23	15.4 ± 3.1

Table: 36 Assessment on Depression at First Follow-up in Group A

Table 36 displays the evaluation of depression in group A at the first follow up. Where it has been observed that 92% of the patient had a depression score of about 15.4±2.5 and 8% of the patients had a borderline depression score of about 10.

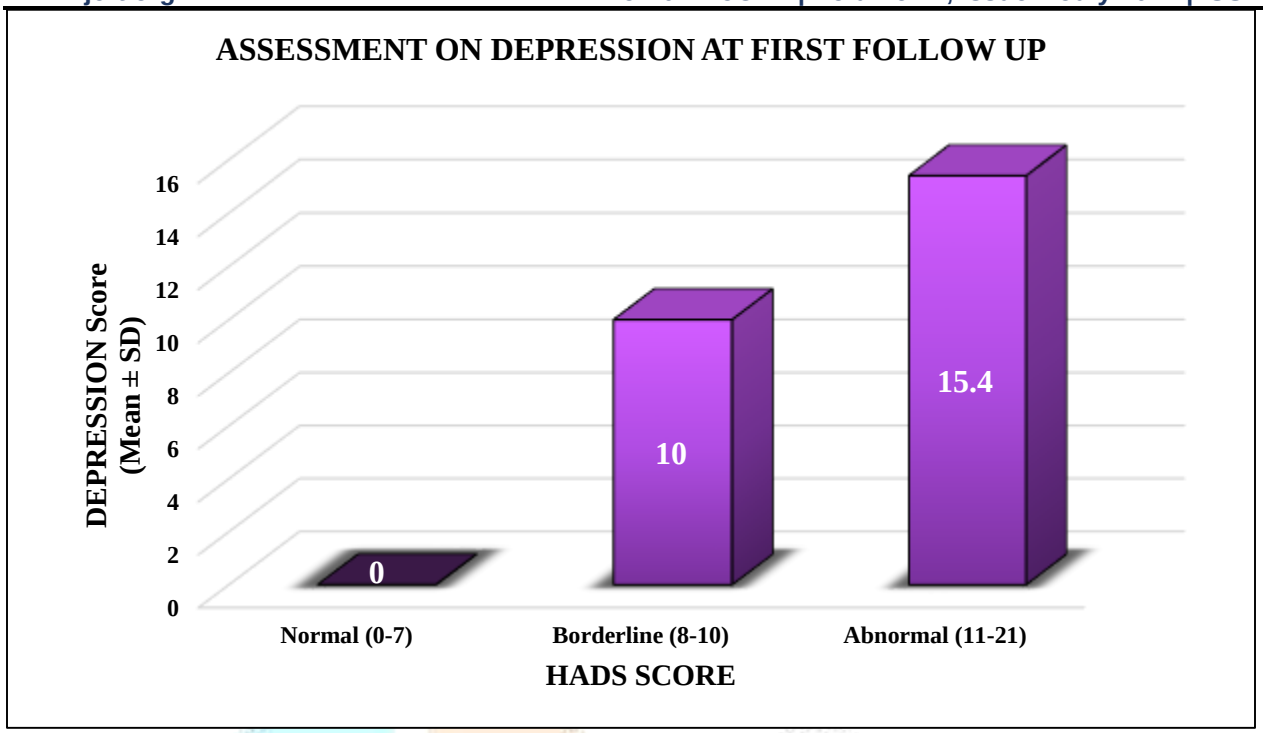


Figure: 36 Assessment on Depression at First Follow-up in Group A

ASSESSMENT ON DEPRESSION IN GROUP -A AT THE SECOND FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	DEPRESSION Score (Mean ± SD)
Normal (0-7)	2	5
Borderline (8-10)	15	9.9 ± 1.1
Abnormal (11-21)	8	12.6 ± 1.4

Table: 37 Assessment on Depression at Second Follow-up in Group A

Table 37, shows assessment of depression in group A at the second follow up was noted, where it was observed that about 32% of patients were having a depression score of 12.6±1.4 and about 60% of patients were having a depression score of 9.9±1.1,8% of patients were having a depression score 5.

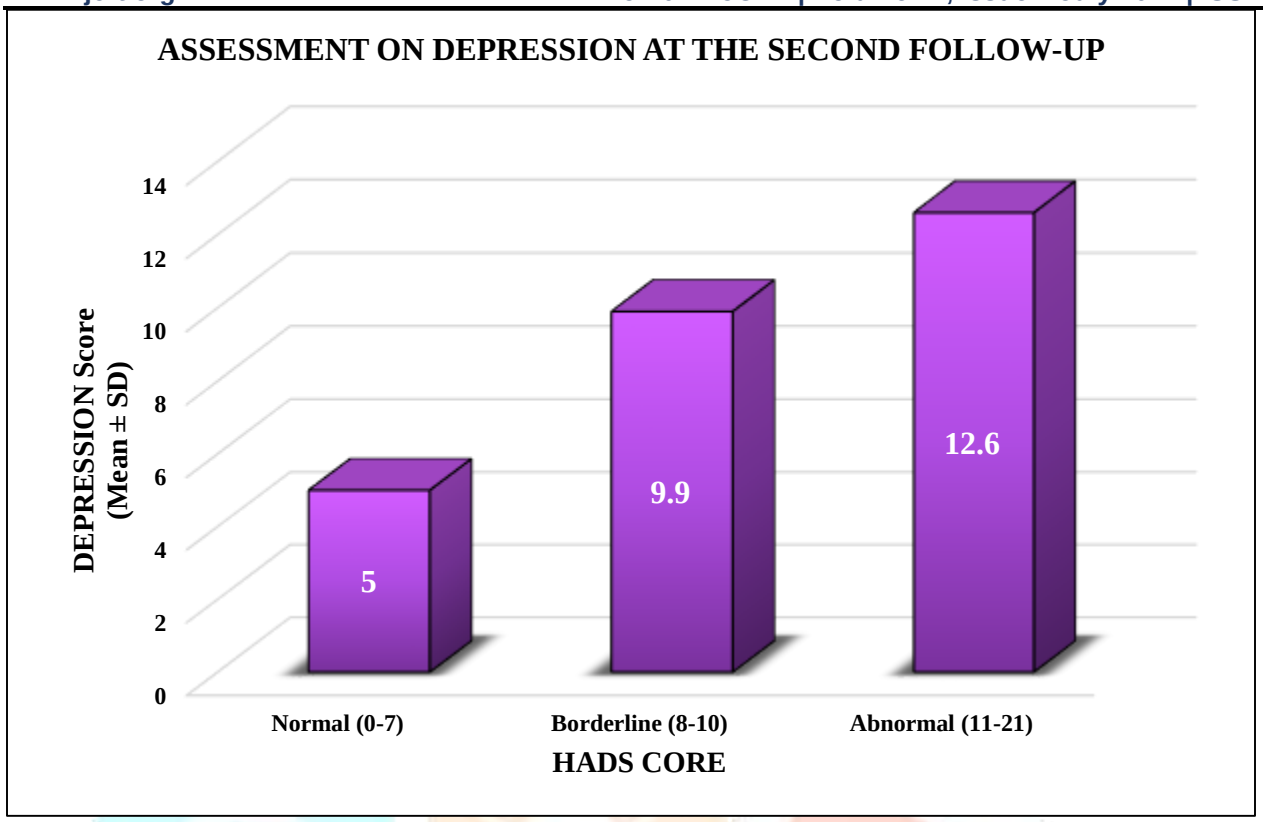


Figure: 37 Assessment on Depression at Second Follow-up in Group A

ASSESSMENT ON DEPRESSION IN GROUP –A AT THE THIRD FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	DEPRESSION Score (Mean ± SD)
Normal (0-7)	21	4.8 ± 1.7
Borderline (8-10)	4	8
Abnormal (11-21)	0	0

Table: 38 Assessment on Depression at Third Follow-up in Group A

From table 38, the third follow-up of depression in group A has been evaluated. This shows 84% of patients had depression score of about 4.8±1.7 and 16% of patients had depression score of 8 where it shows improvement in these patients.

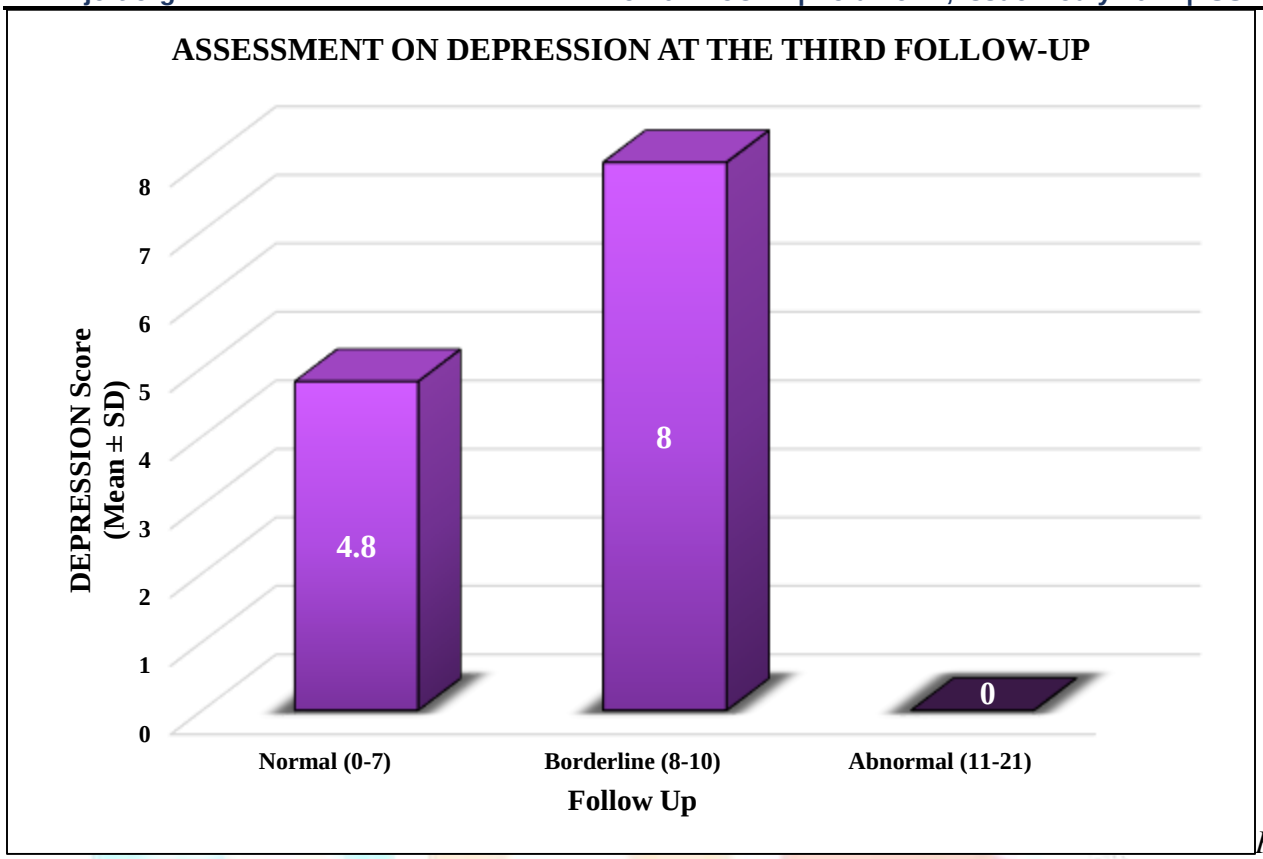


Figure: 38 Assessment on Depression at Third Follow-up in Group A

COMPARISON OF DEPRESSION SCORE IN GROUP A:

FOLLOW UP	DEPRESSION Score (Mean ± SD)
Baseline	15 ± 3.3
Second follow up	10.4 ± 2.3
Third follow up	5.3 ± 1.9*

p value <0.05 was considered to be significant P value= <0.01

Table: 39 Comparison of Depression in Group A

Table 39 shows the comparison of depression between three reviews of group A where it demonstrates the increased score in the initial follow up and declined in the further follow ups and shows the betterment in those patients. The observed difference was p<0.01 which is statistically significant(p<0.05).

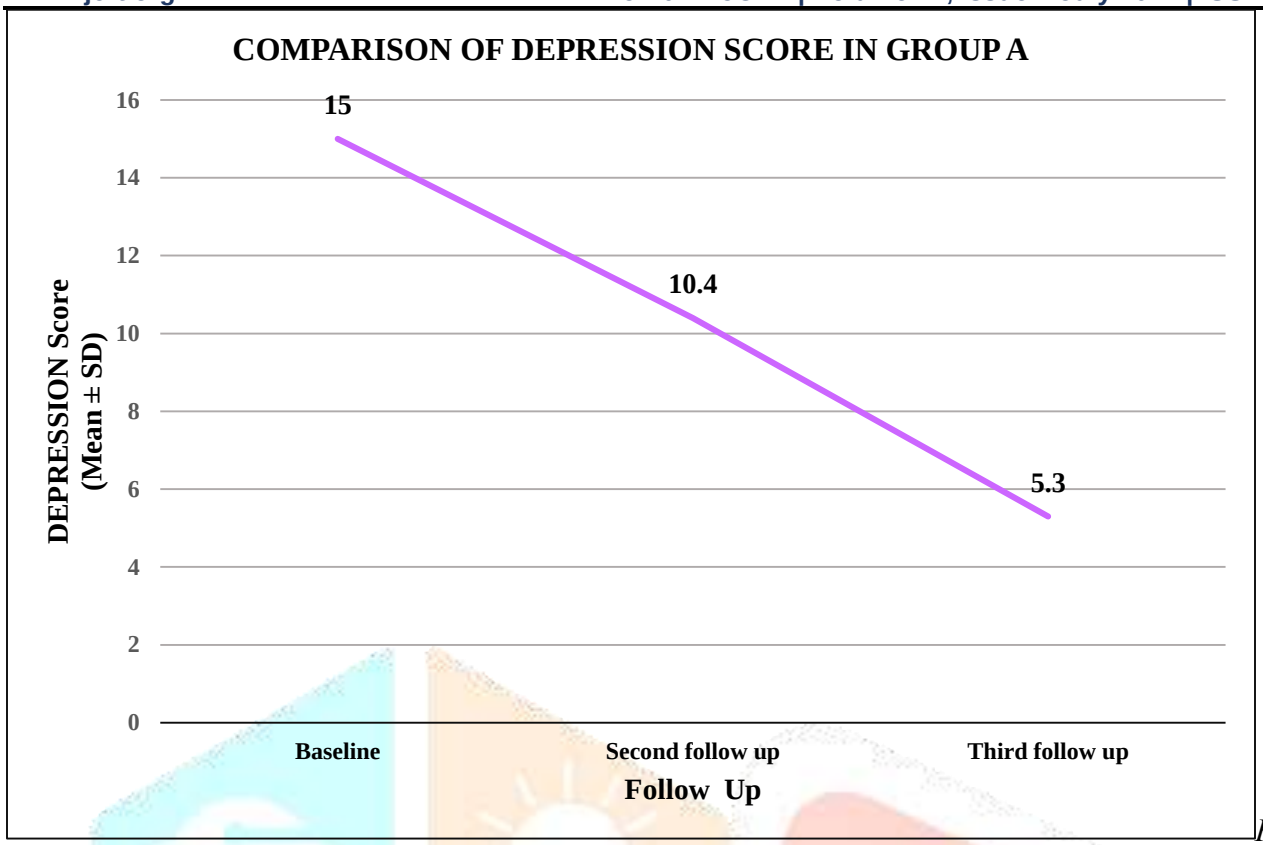


Figure: 39 Comparison of Depression in Group A

COMPARISON OF HADS SCORE IN GROUP A:

HADS	BASE LINE	END LINE
ANXIETY	13.8 ± 3.4	5.5 ± 1.7*
DEPRESSION	15 ± 3.3	5.3 ± 1.9*

**p value <0.05 was considered to be significant P value= <0.01*

Table: 40 Comparison of HADS Score in Group A

Table 40, shows the complete comparison of HADS in Group-A patients, in which it was discovered that the anxiety score for group A was 13.8±3.4 at the start of the study and 5.5±1.7at the end of the study, while the depression score was 15±3.3 at the start of the study and 5.3±1.9 at the end of the study.

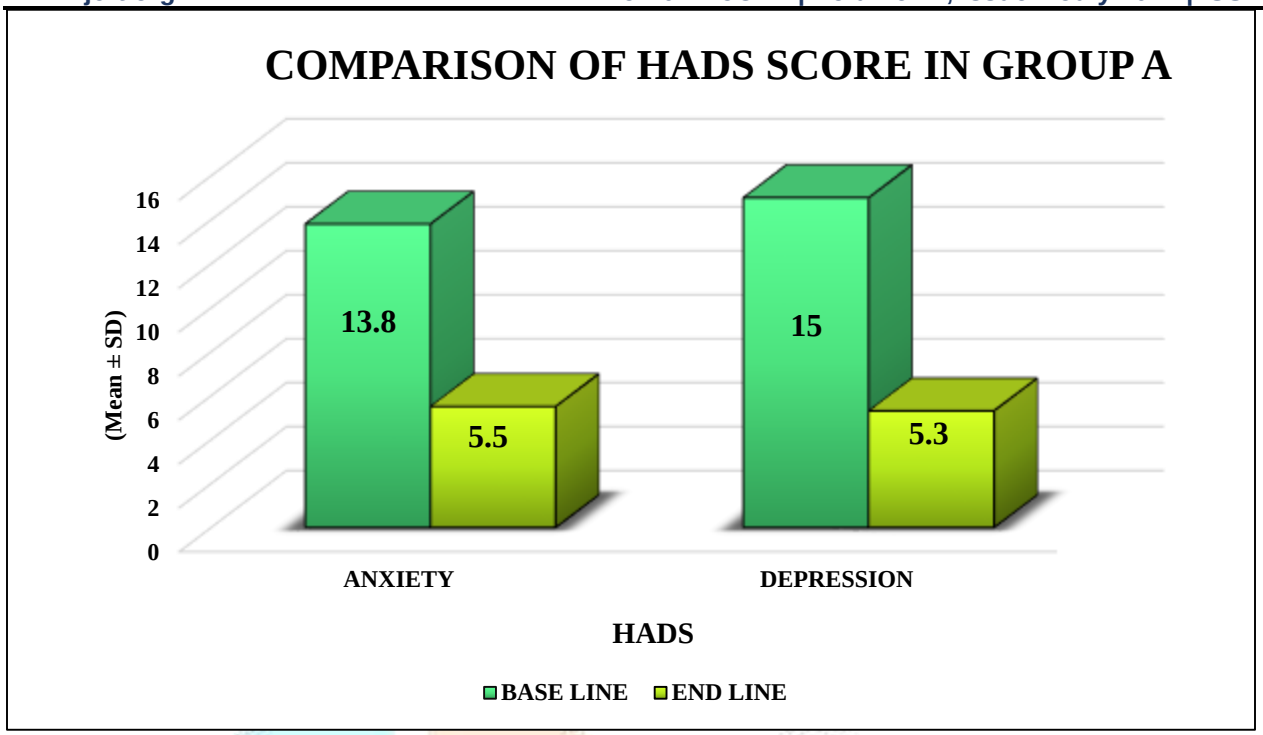


Table: 40 Comparison of HADS Score in Group A

ASSESSMENT ON HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS) IN GROUP B (TENECTEPLASE):

ASSESSMENT ON ANXIETY IN GROUP-B AT FIRST FOLLOW UP:

HADS SCORE	Number of patients (n=25)	ANXIETY score (Mean ± SD)
Normal (0-7)	0	0
Borderline (8-10)	2	8.5 ± 0.7
Abnormal (11-21)	23	15.3 ± 2.9

Table: 41 Assessment on Anxiety at First Follow-up in Group B

Table 41 shows, the assessment of anxiety in group B at the first follow up were 8% of the patients had borderline anxiety score of 15.3±2.9 and 93% of the patients having abnormal score of 8.5±0.7.

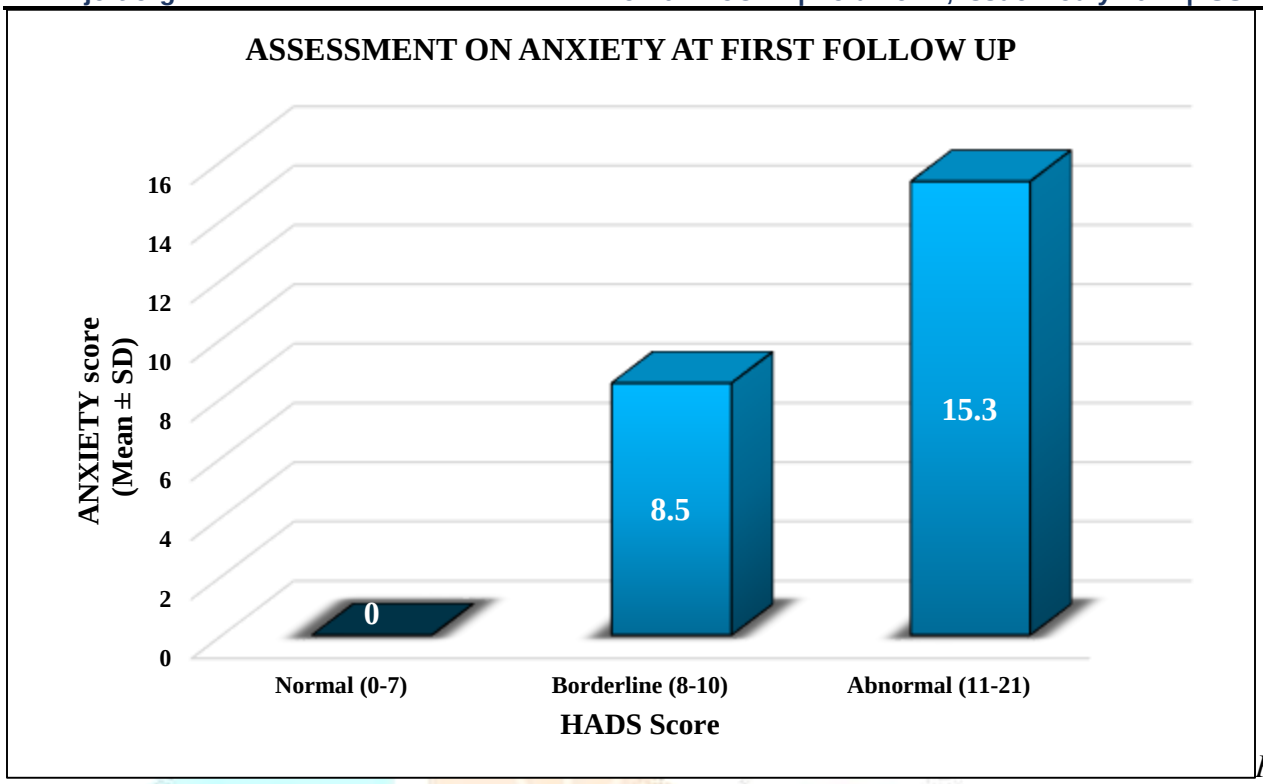


Figure: 41 Assessment on Anxiety at First Follow-up in Group B

ASSESSMENT ON ANXIETY IN GROUP-B AT SECOND FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	ANXIETY score (Mean ± SD)
Normal (0-7)	3	5.3 ± 1.5
Borderline (8-10)	9	9 ± 0.7
Abnormal (11-21)	13	13.1 ± 2.3

Table: 42 Assessment on Anxiety at Second Follow-up in Group B

Table 42, shows the assessment of anxiety in group B at the second follow up 52% of the patient had an anxiety score of 13.1±2.3 and 36% of the patient had score about 9±0.7 and 12% of the patient had score about 5.3±1.5. On evaluating it shows a little improvement from the previous review.

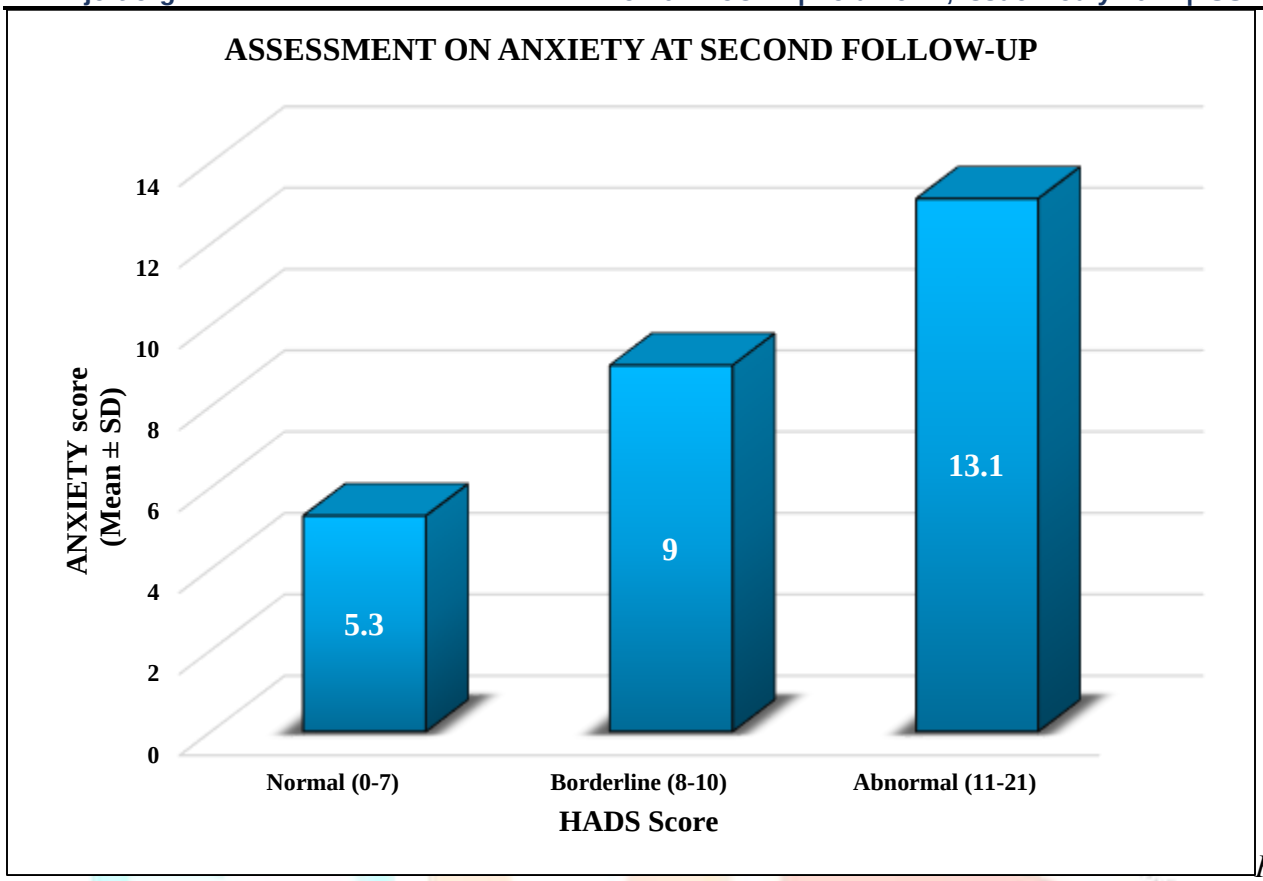


Figure: 42 Assessment on Anxiety at Second Follow-up in Group B

ASSESSMENT ON ANXIETY IN GROUP-B AT THIRD FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	ANXIETY score (Mean ± SD)
Normal (0-7)	24	5.2 ± 1.5
Borderline (8-10)	1	8
Abnormal (11-21)	0	0

Table: 43 Assessment on Anxiety at Third Follow-up in Group B

Table 43 shows the assessment of anxiety in group B at third follow up where 96% of the patients had a score of about 5.2±1.5and 4% patients having borderline score 8; which shows that better improvement from previous two reviews.

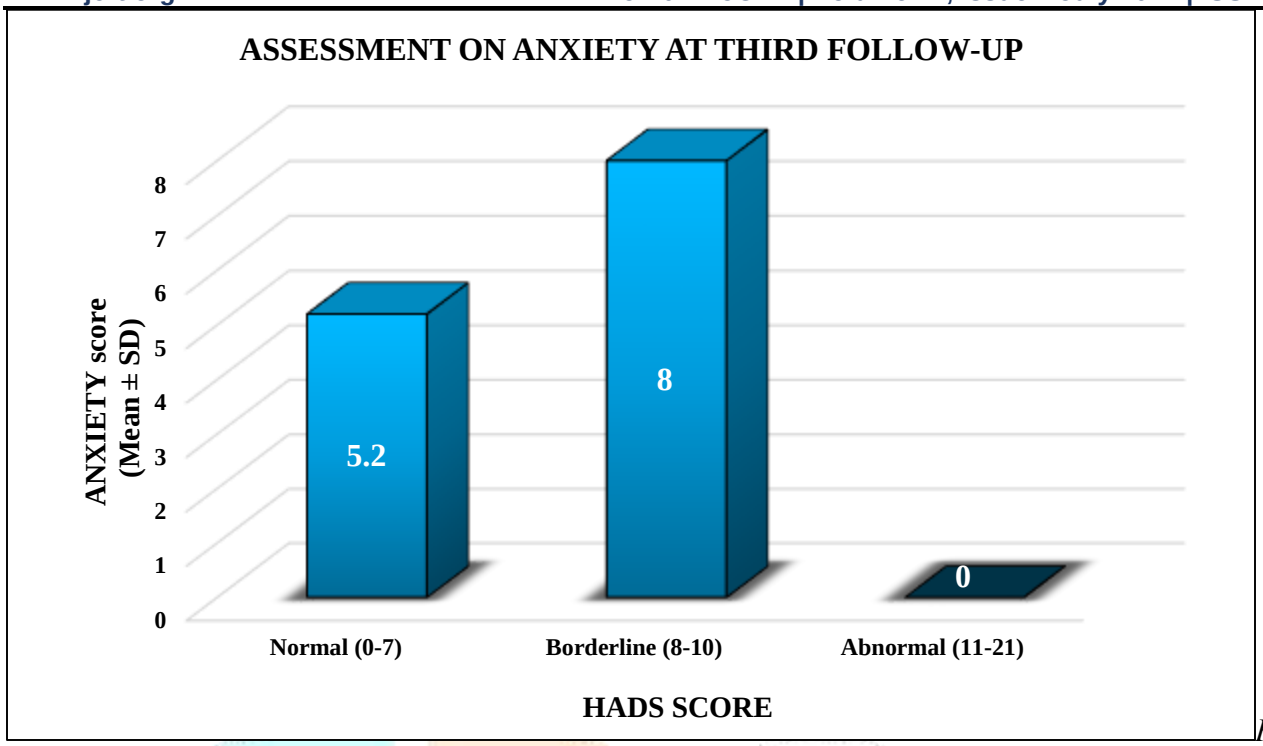


Figure: 43 Assessment on Anxiety at Third Follow-up in Group B

COMPARISON OF ANXIETY SCORE IN GROUP B:

FOLLOW UP	ANXIETY Score (Mean ± SD)
Baseline	14.8 ± 3.3
Second follow-up	10.7 ± 3.3
Third follow-up	5.3 ± 1.8*

p value <0.05 was considered to be significant P value= <0.01

Table: 44 Comparison of Anxiety in Group B

Table 44 shows the comparison between three follow ups of anxiety score in group B. On evaluating the score shows 14.8±3.3 at the initial follow up, and the score declines at the subsequent follow ups. The score declining indicates the better improvement in group B patients, were the observed difference is $p<0.01$ which is statistically significant ($p<0.05$).

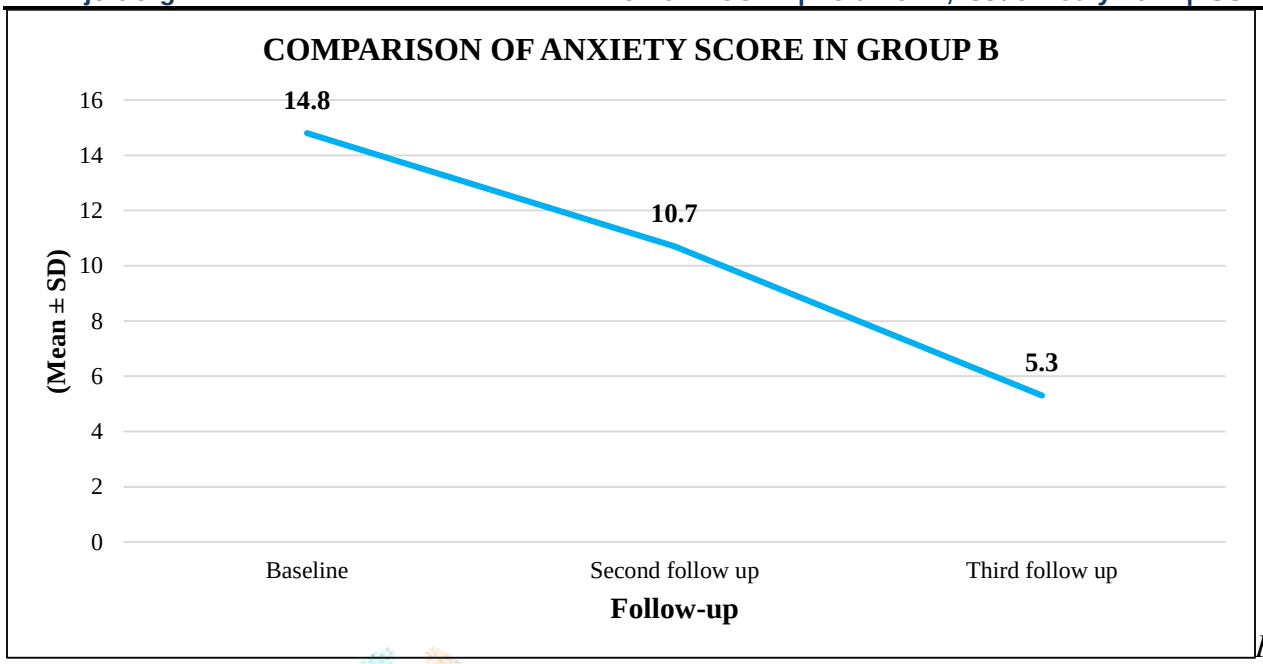


Figure: 44 Comparison of Anxiety in Group B

ASSESSMENT ON HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS) IN GROUP B (TENECTEPLASE):

ASSESSMENT ON DEPRESSION IN GROUP-B AT FIRST FOLLOW UP:

HADS SCORE	Number of patients (n=25)	DEPRESSION Score (Mean ± SD)
Normal (0-7)	2	6 ± 1.4
Borderline (8-10)	5	9.8 ± 0.4
Abnormal (11-21)	18	15.1 ± 2.6

Table: 45 Assessment on Depression at First Follow-up in Group B

Table 45 shows, the assessment of depression in group B at their first follow up, were 72% of the patients had abnormal depression score of about 15.1±2.6 whereas 20% of the patients had borderline score of 9.8±0.4 and 8% of patients having normal score 6±1.4. On assessment it describes the degree of depression was at borderline and at abnormal ranges are more.

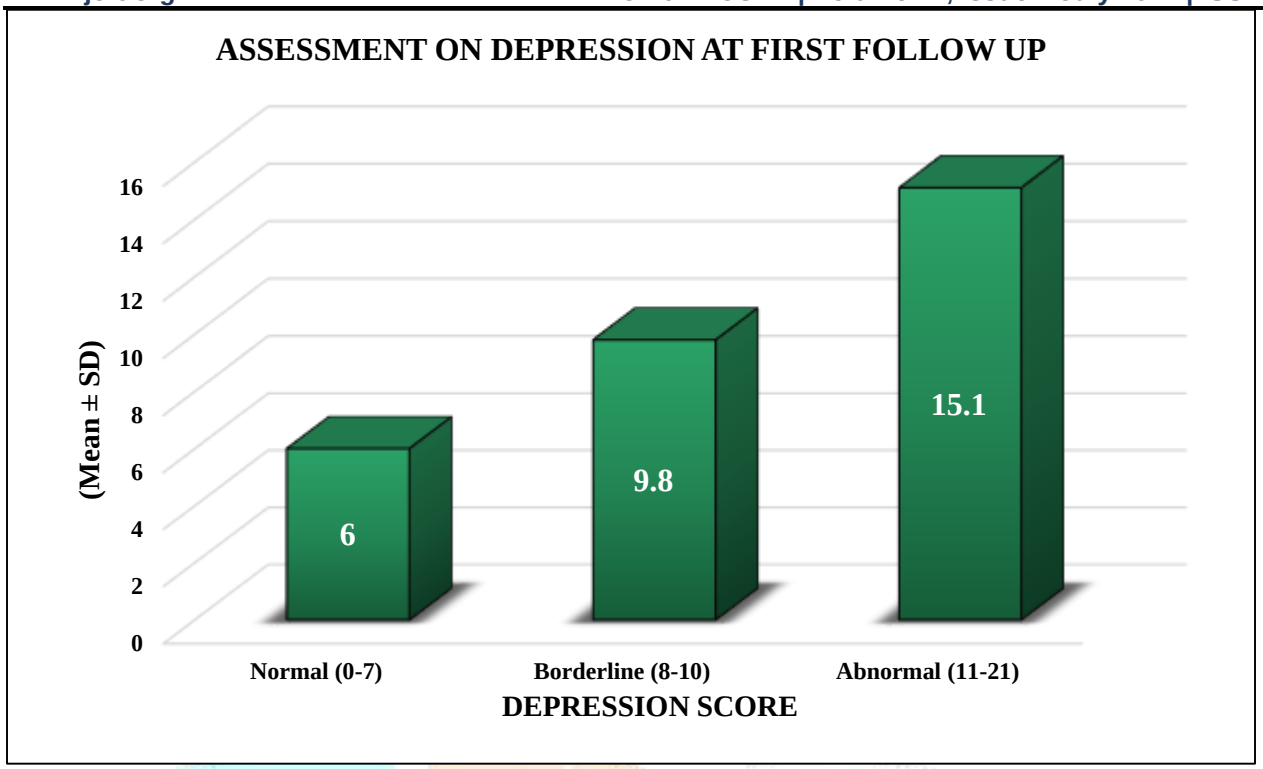


Table: 45 Assessment on Depression at First Follow-up in Group B

ASSESSMENT ON DEPRESSION IN GROUP -B AT THE SECOND FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	DEPRESSION Score (Mean ± SD)
Normal (0-7)	6	5.1 ±1.6
Borderline (8-10)	5	8.8 ± 1
Abnormal (11-21)	14	11.9 ± 1.4

Table: 46 Assessment on Depression at Second Follow-up in Group B

Table 46 shows, the assessment of depression in group B at their second follow up. On evaluation it shows 24% of the patients had the score of 5.1±1.6 and about 56% of the patients had score of 11.9±1.4 and 20% of the patients had the score of 8.8±1.

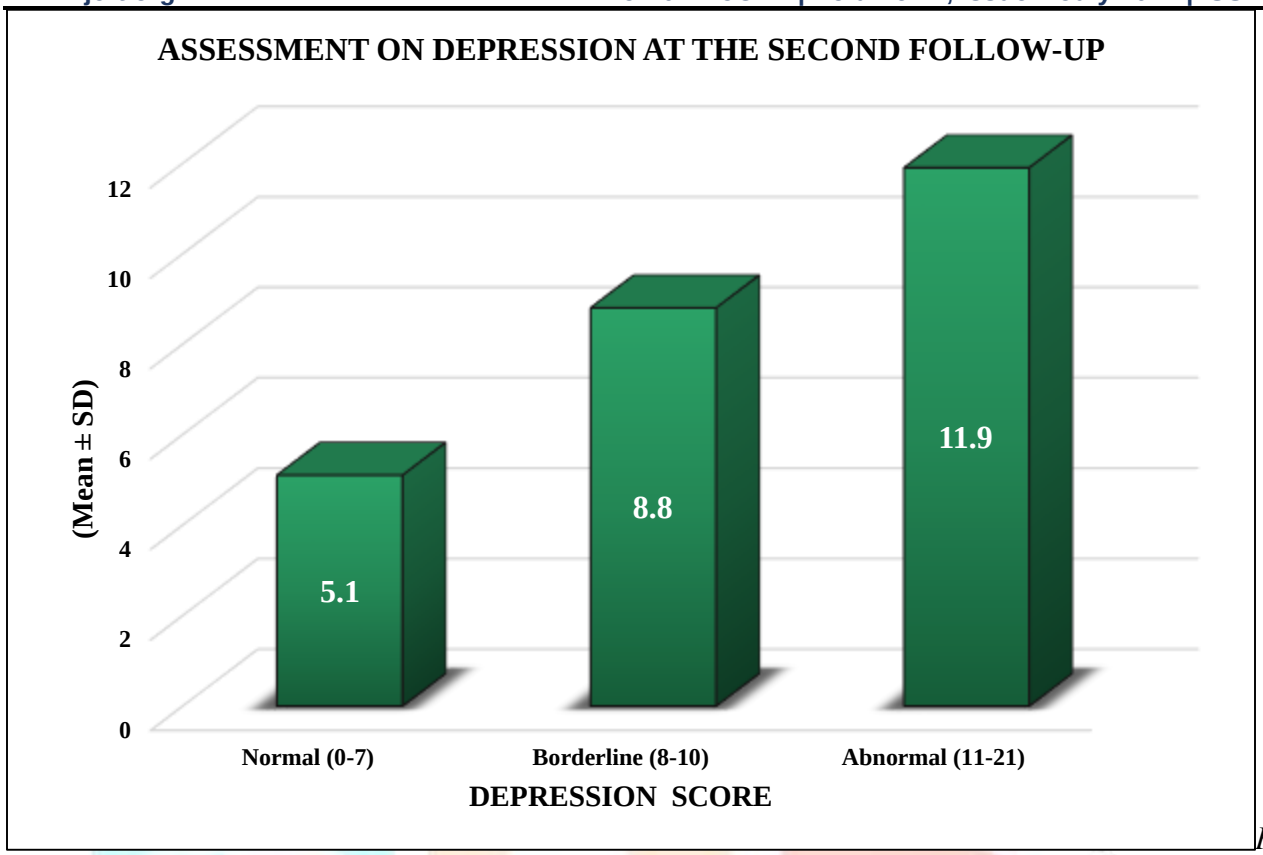


Figure:46 Assessment on Depression at Second Follow-up in Group B

ASSESSMENT ON DEPRESSION IN GROUP -B AT THE THIRD FOLLOW-UP:

HADS SCORE	Number of patients (n=25)	DEPRESSION Score (Mean ± SD)
Normal (0-7)	24	4.2 ± 1.7
Borderline (8-10)	1	10
Abnormal (11-21)	0	0

Table: 47 Assessment on Depression at Third Follow-up in Group B

Table 47, shows the assessment of depression in group B at the third follow up. Where 96% of the patients had normal depression score of 4.2±1.7 and 4% of the patients had borderline depression score of 10. which shows that better improvement from previous two reviews.

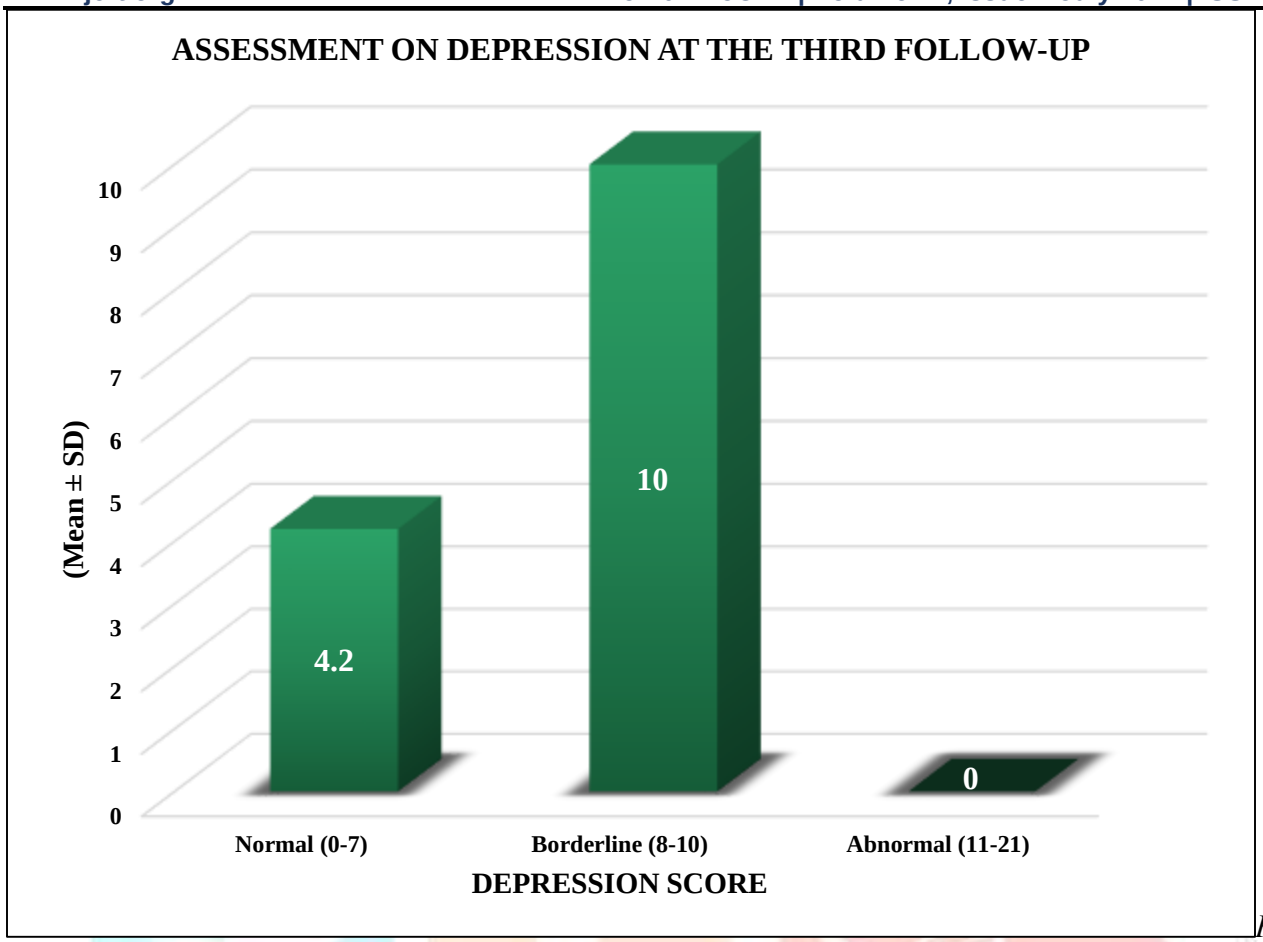


Figure: 47 Assessment on Depression at Third Follow-up in Group B

COMPARISON OF DEPRESSION SCORE IN GROUP B:

FOLLOW UP	DEPRESSION Score (Mean ± SD)
Baseline	13.3 ± 3.8
Second follow-up	9.6 ± 3.1
Third follow-up	4.5 ± 2*

p value <0.05 was considered to be significant P value= <0.01

Table: 48 Comparison of Depression in Group B

Table 48 shows, the comparison of depression score in group B, were on evaluation the score shows 13.3± 3.8 in the start of the study and 9.6±3.1 during the second follow up and declines in the third follow up of 4.5±2. This indicates an improvement in the third follow up when compared to the initial follow up. The observed difference is $p<0.001$ which is statistically significant ($p<0.05$).

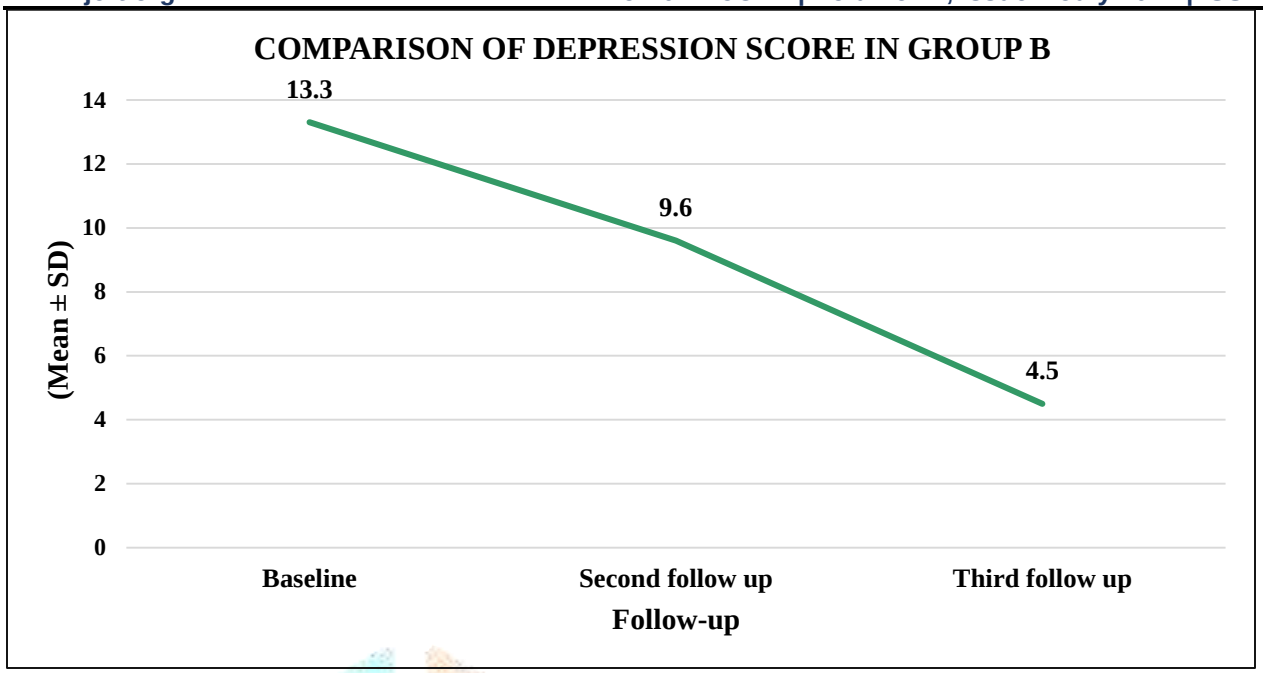


Table: 48 Comparison of HADS Score in Group B

COMPARISON OF HADS SCORE IN GROUP B:

HADS	BASE LINE	END LINE
ANXIETY	14.8 ± 3.3	5.3 ± 1.8*
DEPRESSION	13.3 ± 3.8	4.5 ± 2*

**p value <0.05 was considered to be significant P value= <0.01*

Table: 49 Comparison of HADS Score in Group B

From table 49, on evaluation it shows the comparison of HADS score in group B, in which it was discovered that the anxiety score for group B was 14.8±3.3 at the start of the study and 5.3±1.8 at the end of the study, while the depression score was 13.3±3.8 at the start of the study and 4.5±2 at the end of the study.

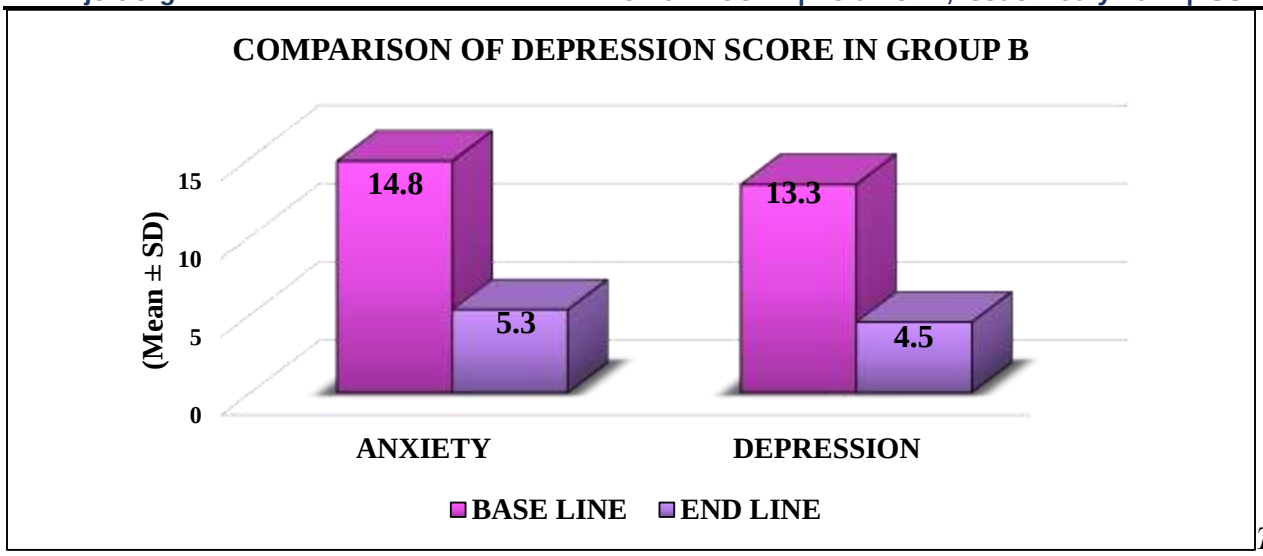


Table: 49 Comparison of HADS Score in Group B

COMPARISON OF HADS SCORE IN BOTH GROUP A & B:

GROUPS	HADS	BASE LINE	END LINE
ALTEPLASE	ANXIETY	13.8 ±3.4	5.5 ± 1.7*
	DEPRESSION	15 ± 3.3	5.3 ± 1.9*
TENECTEPLASE	ANXIETY	14.8 ± 3.3	5.3 ± 1.8*
	DPRESSION	13.3 ± 3.8	4.5 ± 2*

**p value <0.05 was considered to be significant P value= <0.03*

Table: 50 Comparison of HADS Score in Both Groups

Table 50 shows, the comparison of HADS score in both groups A and B. On evaluation it has been assessed that the score of HADS in group A is higher when compared to group B, HADS score in group B shows a better outcome than group A. The degree of anxiety at the start of study in group A is 13.8 ±3.4 and for group B it is 14.8±3.3 and at the end of the study is 5.5±1.7 for group A and for group B it is 5.3±1.8. The degree of depression at the start of the study in group A is 15±3.3 and for group B it is 13.3±3.8 and at the of the study is 5.3±1.9 for group A and for group B it is 4.5±2

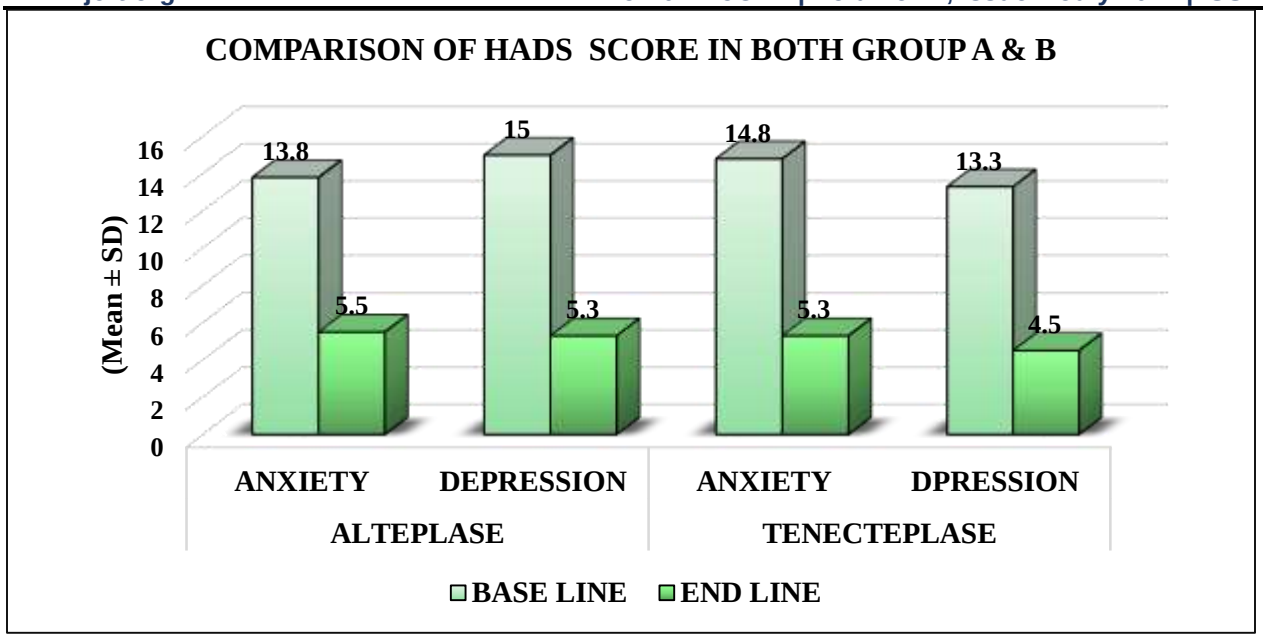


Figure: 50 Comparison of HADS Score in Both Groups

COST-EFFECTIVE ANALYSIS OF ALTEPLASE AND TENECTEPLASE:

Incremental Cost -Effective Ratio (ICER)= Difference in Cost / Difference in Effectiveness

COST ANALYSIS:

	GROUP	COST PER UNIT (₹)	TOTAL COST IN 25 PATIENTS (₹)	DIFFERENCE IN COST
COST OF INTERVENTION	ALTEPLASE	₹ 49,310	₹1,232,750	₹360,125
	TENECTEPLASE	₹ 34,905	₹872,625	

Table: 51 difference in cost

Table 50 shows the cost effective analysis of intervention of both the Groups (Alteplase and Tenecteplase), the difference in intervention of both the drugs shows 360,125 rupees.

EFFECTIVE ANALYSIS:

GROUP	EFFECTIVENSS (MEAN)	DIFFERENCE IN EFFECTIVENESS
ALTEPLASE	158.9	52.9
TENECTEPLASE	211.8	

Table: 52 Difference in Effectiveness

Incremental Cost -Effective Ratio (ICER)=360,125 / 52.9

= ₹6,807 per unit of effectiveness

- ALTEPLASE is ₹6,807 per unit of effectiveness costlier than TENECTEPLASE
- So Tenecteplase is Less costly and has great effectiveness than Alteplase

Table 52 shows, the effectiveness of intervention of two group, were the mean value of effectiveness of Alteplase was 158.9 and as for Tenecteplase the mean value of effectiveness was 211.8 and the difference in effectiveness of both group was 52.9. On evaluation, Alteplase was costlier and less effective than Tenecteplase.

DISCUSSION

This study aims to compare the efficacy of Alteplase and Tenecteplase in acute ischemic stroke and to assess the changes in quality of life in these patients after thrombolytic therapy and also to assess the cost-effectiveness of both drugs. The two drugs considered in this study are Alteplase and Tenecteplase which are thrombolytic agents used for the treatment of AIS.

Alteplase is a thrombolytic agent which is a FDA-approved drug for use in acute ischemic stroke, acute myocardial infarction, and occluded catheters. It converts fibrinogen to the proteolytic enzyme plasmin, which lysis fibrin as well as fibrinogen.

Tenecteplase is a fibrin-specific tissue plasminogen activator, a thrombolytic agent for acute ischemic stroke due to its drug characteristics and ease of administration, and has a longer half-life. At 0.5mg/kg, has regulatory approval to treat ST–segment elevation myocardial infarction.

In this study about 50 patients were taken, among them 25 patients are categorized into one group and treated with Alteplase, and the remaining 25 patients were categorized into another group and they are treated with Tenecteplase. Statistical analysis was performed using a student t-test and a detailed analysis was performed.

The study provides the mean score on each follow-up of both the groups while using NIHSS and MRS for assessing the efficacy of the drugs used, which showed a steep response during the study. Where on assessment of the effect of Alteplase on the neurological status during the first follow-up, the mean score of NIHSS was 7.04±3.1 and MRS was 2.36±0.8, on second follow up the mean score of NIHSS was 5.08±1.9 and MRS score was 1.5±0.8, and on the third follow up, the mean score of NIHSS was 2.04±1.5 and MRS score was 1.1±0.7, these results are similar to that of the study conducted by ***Steven.J.Warach et al.***

When on assessment of the effect of Tenecteplase on the neurological status during the first follow-up, the mean score of NIHSS was 5±1.8 and MRS was 2±0.9, on second follow up the mean score of NIHSS was 2.9±1.5 and MRS score was 0.8±0.9, and on the third follow up, the mean score of NIHSS was 1.3±1.1 and MRS score was 0.4±0.7, these results are similar to that of the study conducted by ***Steven.J.Warach et al.*** shows difference of 15.3% between two groups.

This study demonstrated that there is a significant difference in the efficacy of drugs by checking the neurological conditions of all the patients using NIHSS and MRS scales. On the evaluation of both drugs, Tenecteplase shows a better outcome when compared to the other drug Alteplase which shows a difference of 15.3% between the two groups. The

observation shows a similar outcome study conducted by ***Steven.J.Warach et al***. In their study to test defined hypotheses about Tenecteplase versus Alteplase in routine clinical practice in which they found Tenecteplase as a non-inferiority for early indices of efficacy and reduced hospital costs compared to Alteplase as a result they found Tenecteplase as an alternative to Alteplase for ischemic stroke thrombolysis additionally shorter time from stroke onset to Tenecteplase bolus in their data was associated with a higher probability of the favorable outcome of walking independently.

This study also assessed the health-related quality of life in AIS patients using SS-QOL, where the result provides a better outcome in patients treated with Tenecteplase than Alteplase, which is similar to that of the study conducted by ***Williams et al***. In their study of SS-QOL assesses health-related quality of life specific to stroke survivors, the scale contains 49 domains in which the score ranges from 49-245 and they found Higher scores indicate better functioning.

This study also demonstrates the degree of anxiety and depression using the HADS scale in AIS patients which is similar to the study conducted by R.Philip Snaith, where they found that the HADS was found to perform well in assessing severity and caseness of anxiety disorders and depression in both somatic and psychiatric cases in hospital patients.

This study has a difference of 15.3% between the two groups

The investigation also looked at the cost-effectiveness analysis of both drugs which was based on the Median based incremental Cost Effectiveness Ratio(ICER)

This study also showed a remarkable improvement in the QOL of AIS patients which was done by evaluating SS-QOL which was filled during the three reviews after the treatment. It was evident from the comparison that the patients had an improvement in lifestyle and mental and physical health in group A when compared to group B patients.

The effectiveness of Alteplase and Tenecteplase is comparable. Significant differences were discovered between the two groups. When compared to Alteplase, Tenecteplase acts faster and has a somewhat greater effect on the effectiveness and quality of life of patients with AIS.

COCLUSION

This study indicated that Tenecteplase is more effective than Alteplase in treating acute ischaemic stroke. However, in individuals using Tenecteplase, social functioning improves as compared to Alteplase. Tenecteplase outperformed Alteplase in terms of quality of life. It was also discovered that analysing the HADS score results in an improvement in the patient's mental health state, with Tenecteplase patients having a better outcome than Alteplase patients. The cost-effectiveness of both medications is assessed using ICER.

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