



# A STUDY ON THE PREVALENCE OF URINARY INCONTINENCE IN HOSPITALIZED STROKE PATIENTS IN A TERTIARY CARE HOSPITAL

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## ABSTRACT:

## PURPOSE:

The objective of this study is to evaluate the prevalence of urinary incontinence in stroke patients and to calculate the severity of urinary incontinence.

## INTRODUCTION:

Urinary incontinence is also called as involuntary micturition (or) leakage of urine that you can't control. It is most under medical reporting problem that affects the emotional, psychological and social life of the people. It is not always caused by stroke or underlying medical condition like Parkinson's disease, multiple sclerosis, Alzheimer's disease. It is common in elderly people affecting 1 in 20 people under age of 65 years and 1 in 12 people above 75 years of age.

## METHODS:

This Study was Conducted in the Neurology department of Lalitha Super Speciality Hospital, Guntur Andhra Pradesh. A 300 bedded multi specialty tertiary care hospital for a period of 6 months. The procedure of the study was a prospective observational study was conducted in the hospitalized stroke patients.

The inclusion criteria for the study are the patients admitted in the hospital of above 18 years, inpatients who are diagnosed with stroke, patients who are willing to participate in study, urinary incontinent patients with past medical history of ischemic stroke.

## RESULTS & DISCUSSION:

A sample of 150 patients were enrolled into the study. The data was taken from the patient who is admitted in the hospital. In this study the prevalence of urinary incontinence, possible etiologies of urinary incontinence in different types of stroke patients.

Out of 150 patients 107(71.33%) patients were males and 43(28.66%) were females. Out of 107 males 42(39.2%) were incontinent on admission and 21(19.6%) were incontinent at the time of discharge. Out of 43 females 21(48.8%) were incontinent on admission and 13(30.2%) were incontinent at the time of discharge. According to our study females are more prone to urinary incontinence than males. The risk of urinary incontinence raises as the age of patient increases. our study has shown direct proportionality between age and urinary incontinence.

## CONCLUSION:

The current study has shown that there is a clear association between stroke and urinary incontinence. Finally, we concluded that the risk of urinary incontinence is more in females and the patients with recurrent stroke. There was increased percentage of urinary incontinence in patients with increased age group.

Thus, the urinary incontinence should be screened in all stroke centers based on the revised urinary incontinence scale (RIUS). Patient counselling was provided to patients such as behavioral interventions include timed voiding, prompted voiding, bladder retraining with urge suppression, pelvic floor muscle training, and compensatory rehabilitation approaches.

**Key words:** Stroke, urinary incontinence, prevalence, student T test, revised urinary incontinence.

## Introduction:

Stroke is a medical condition in which poor blood flow to the brain results in cell death. Stroke is one of the most common neurological disorders in clinical practice. <sup>[1]</sup> According to WHO, it is the second commonest cause of death worldwide. It is forecasted that the deaths because the of stroke will rise to 6.5 million by 2015 and by 2020, stroke and coronary artery disease are expected to be the leading causes of losing life. Earlier Surveys on stroke in different parts of India shown that the prevalence of stroke varies in different regions of India and ranges from 40 to 270 per 1,00,000 populations. Stroke is responsible for around 11% of all deaths worldwide.

## METHODOLOGY

### *Study design:*

This was a prospective, observational and cross sectional randomized study on prevalence of urinary incontinence in stroke patients. This study was conducted in neurology ward in a tertiary care hospital of Guntur.

### *Study site:*

The study was carried out in LALITHA SUPER SPECIALITY HOSPITAL tertiary of Guntur.

### *Study Period:*

We conducted a study in a period of 6 months.

### *Study Population & Sampling:*

A total of 150 subjects were enrolled the study who were diagnosed with ischemic stroke. Hemorrhagic stroke patients were not included in study based on exclusion criteria. Out of 150 subjects 107 patients were males and 43 were females. No subject was dropped out of study because this study includes in patients only.

### *Study Criteria:*

Inclusion criteria:

1. In patients who were diagnosed with ischemic stroke
2. Patients with age above 18 years
3. Patients who are willing to participate in study
4. Patients who were diagnosed with recurrent ischemic stroke
5. Urinary incontinent patients with past medical history of ischemic stroke.

Exclusion criteria:

1. patients with age below 18years
2. Heart failure patients
3. patients with kidney problems and kidney failure
4. patients with prostate hypertrophy
5. patients using diuretics

**Study Tools:**

Patient's data were collected from the past medical records of the patients and in patients' medical records in hospital. A self-administered questionnaire was prepared to choose patient for study and RUIS scale was used to assess the urinary incontinence and severity of urinary incontinence in patients.

1. What is your age?

The intention of the question is to know whether the patient is eligible to study according to age criteria or not.

2. Do you any heart related problems such as heart failure?

The intention of the question is to eliminate the heart failure patients from study

3. Do you have any kidney related problems?

The intention of the question is to eliminate kidney failure patients from study

4. Do you have any prostate related problem?

The intention of the question is to eliminate prostate disease patients from study

5. Do you have any problem with urination?

The intention of the question is to eliminate the patients with previous history of urinary incontinence.

6. Are you using any diuretics?

The purpose of this question is to eliminate patients who are using diuretic

7. Are you suffering with Diabetes?

The intention of this question is to know the whether patient having diabetes or not.

**Interviewers:**

- The interviews were carried out by the students of the project members by telephone communication and through direct interview.
- The interviewers were familiarized with the questionnaire and trained in the proper manner of questioning as well as being familiarized with the operational definitions in order to maintain the uniformity of interpretation and explanation for the benefit of the illiterate and non-English speaking respondents.
- It was stressed that the interviewers write the responses as stated by the respondents and not their own interpretation of what was stated.
- The interviewers were also trained not to show bias or emotion during the interview. Non-respondents were not replaced for the purpose of the survey brief introduction about the purpose and nature of the study and assurance about confidentiality were explained to the respondents prior to the interview.
- The interview for each respondent lasted 10 to 15 minutes on average. The interviewers were trained on scoring of RUIS score of the individual patient and to interpret the score of the RUIS scale.

**Data analysis:**

The responses in the recording form were manually checked for errors on admission. Standardized codes were used to simplify the coding process and analysis. Data were analyzed using PRISM software Version 11.0. Data analysis was done based on the objectives of the study. Data screening was done to determine associations or correlations between variables. Student T test was used to calculate P value. A p value less than 0.05 was considered to be statistically significant.

**Minimizing errors:**

1. The interviewers were familiarized with the questionnaire and adequately trained to complete the required responses to minimize interviewer bias.
2. A weekly assessment of completed questionnaires was carried out by a single coordinator and feedback provided to the interviewers.

3. Regular supervision of interviewers was carried out during the course of datacollection.
4. Accuracy of data entry was assessed by a 10 % reassessment of data entry andcrosschecks with the hard copy of the data.

***Ethical issues:***

1. The participants were briefed regarding the nature, objectives and method of study andtheir voluntary participation acquired.
2. Participants were reserved the right to withdraw from the study at any point of time.
3. Total confidentiality with regard to the identification of the participants andinformation volunteered was assured at all times during and after survey.

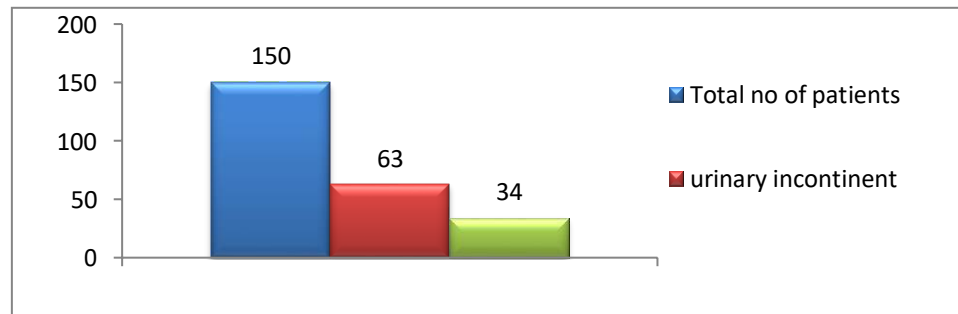
**RESULTS & DISCUSSION**

To the best of our knowledge, this is our first study to evaluate the prevalence of the urinary incontinence associated with stroke in LALITHA SUPER SPECIALTY HOSPITAL GUNTUR. The results were obtained for a period of 6 months duration study in the neurology department of tertiary care hospital. A total of 150 patients were enrolled in the study & the data was analyzed.

Prevalence of urinary incontinence in total patients

<b>CATEGORY</b>	<b>TOTAL</b>	<b>PERCENTAGE</b>
<b>No. of patients with UI on admission</b>	<b>63</b>	<b>42%</b>
<b>No. of patients with UI on discharge</b>	<b>34</b>	<b>22.6%</b>

***Table 1: Distribution of patients based on admission and discharge***



**Graph 1: No. of pts having urinary incontinence on admission,discharge**

A total of 150 patients were enrolled in the study according to the inclusion and exclusion criteria of study.

Out of 150 patients 42% (63 patients) of patients were urinary incontinent at the time of admission.

Among 63 patients 27 patients have mild urinary incontinence, 17 patients have moderate urinary incontinence and 19 patients have severe urinary incontinence.

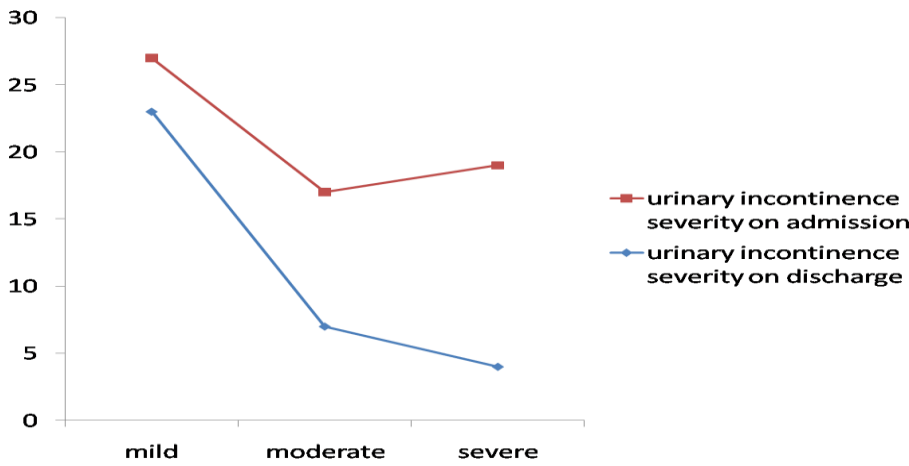
Out of 34 patients were urinary incontinent at time of discharge that is equal to 22.6% of patients. Out of 34 patients 23 patients have mild urinary incontinence, 7 patients have moderate urinary incontinence and 4 patients have severe urinary incontinence.

The severity of urinary incontinence was measured using RUIS scale.

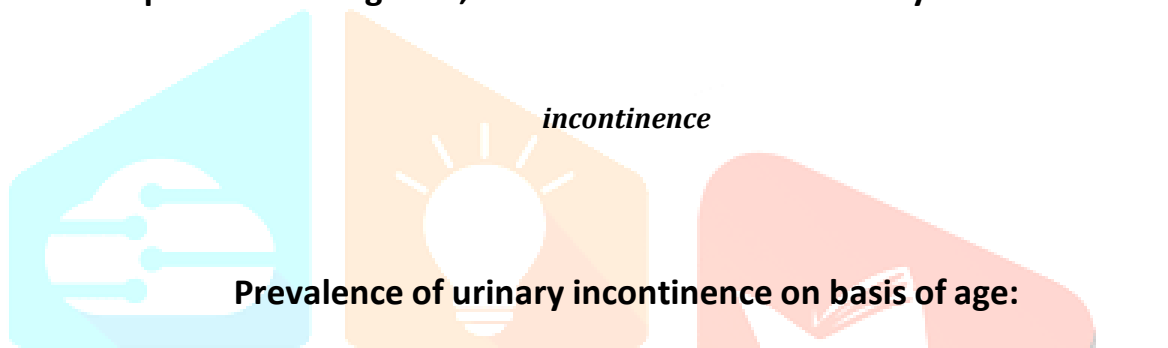
This data suggest that there is decreased prevalence and severity of urinary incontinence at the time of discharge.

TYPE OF INCONTINENCE	PATIENTS WITH UI ON ADMISSION	PATIENTS WITH UI ON DISCHARGE
MILD	27	23
MODERATE	17	7
SEVERE	19	4

**Table 2: Distribution of patients based on mild, moderate and severe urinary incontinence**



**Graph 2: No. of patients having mild, moderate and severe urinary**

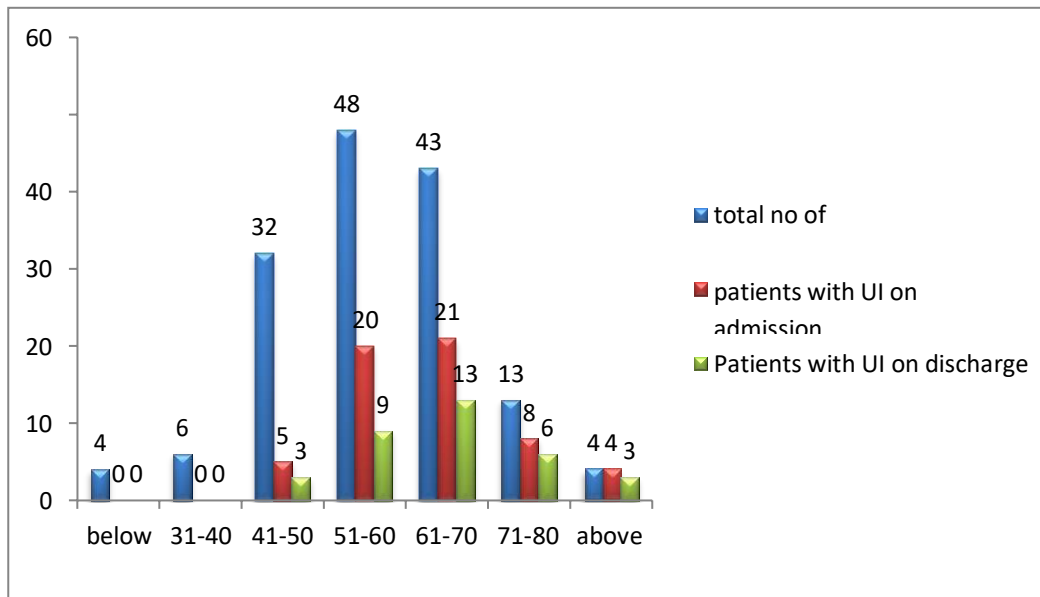


AGE	BELOW 30	31-40	41-50	51-60	61-70	71-80	ABOVE 80
TOTAL NOOF PATIENTS	04	06	32	48	43	13	04
PATIENTS WITH UI ON ADMISSION	00	00	05	20	21	08	04
PATIENTS WITH UI ON DISCHARGE	00	00	03	09	13	06	03

**Table 3: No .of patient's having urinary incontinence according to age**

**group**





**Graph 3: Percentage of patients with urinary incontinence with respect**

### **to age group at time of admission and discharge**

Among 150 patients 4 peoples were belongs to age group (below 30), out of 4 no one is presented with urinary incontinence during both admission and discharge, 06 patients were belongs to age group (31-40), out of 06 patients no one presented with urinary incontinence during both admission and discharge, 32 patients were belongs to the age group (41-50), out of 32 patients 5 patients were presented with UI during admission and 03 patients are presented with UI during discharge, 48 patients were belongs to age group (51-60), out of 48 patients 20 patients were presented with IU during admission and 09 patients were patients presented with UI during discharge, 43 patients were belongs to age group of (61-70), out of 43 patients 21 were presented with UI during admission and 13 were presented with UI during discharge, 13 patients were belongs to age group (71- 80), out of 13 patients 08 patients were presented with UI during admission and 06 patients were patients presented with UI during discharge, 04 patients were belongs to age group (above 80), out of 04 patients 04 patients were presented with UI during admission and 03 patients were patients presented with UI during discharge.

Based on above demographic data the risk of urinary incontinence rises as the age of

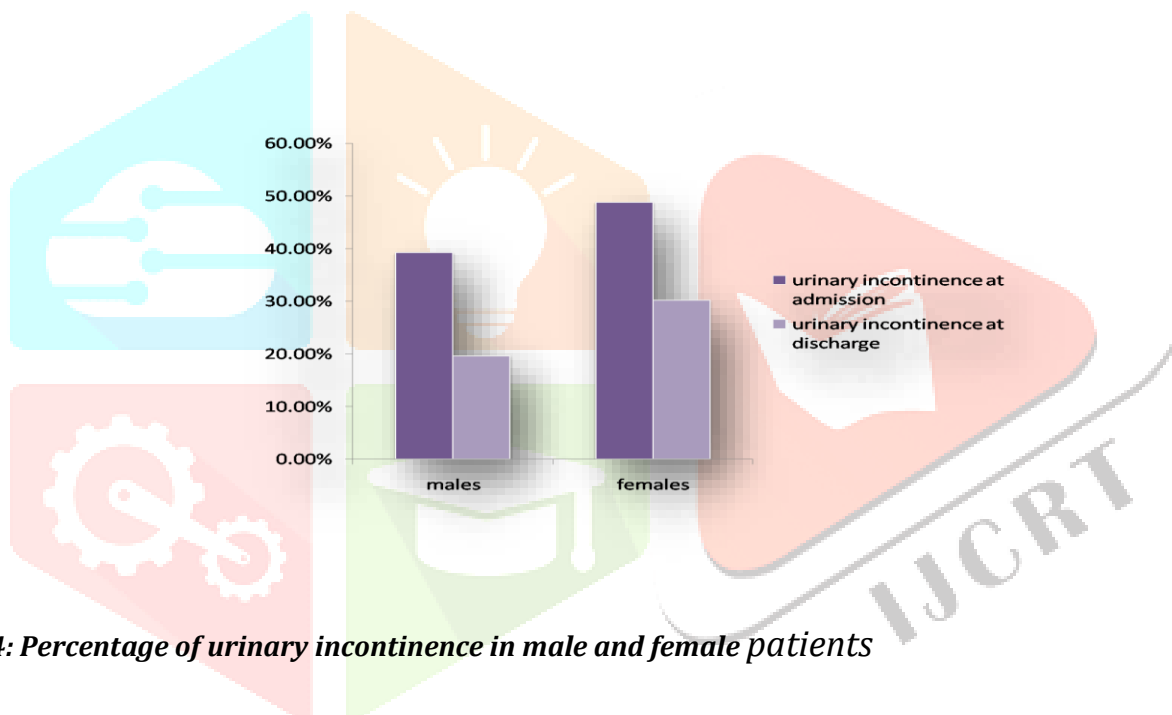
patient increases. Our study had shown direct proportionality between age and urinary

incontinence. There was increased percentage of urinary incontinence patients with increased age group. The

results were analyzed using paired T test and proven to be significant with p value 0.03.

***Prevalence of urinary incontinence on basis of gender:***

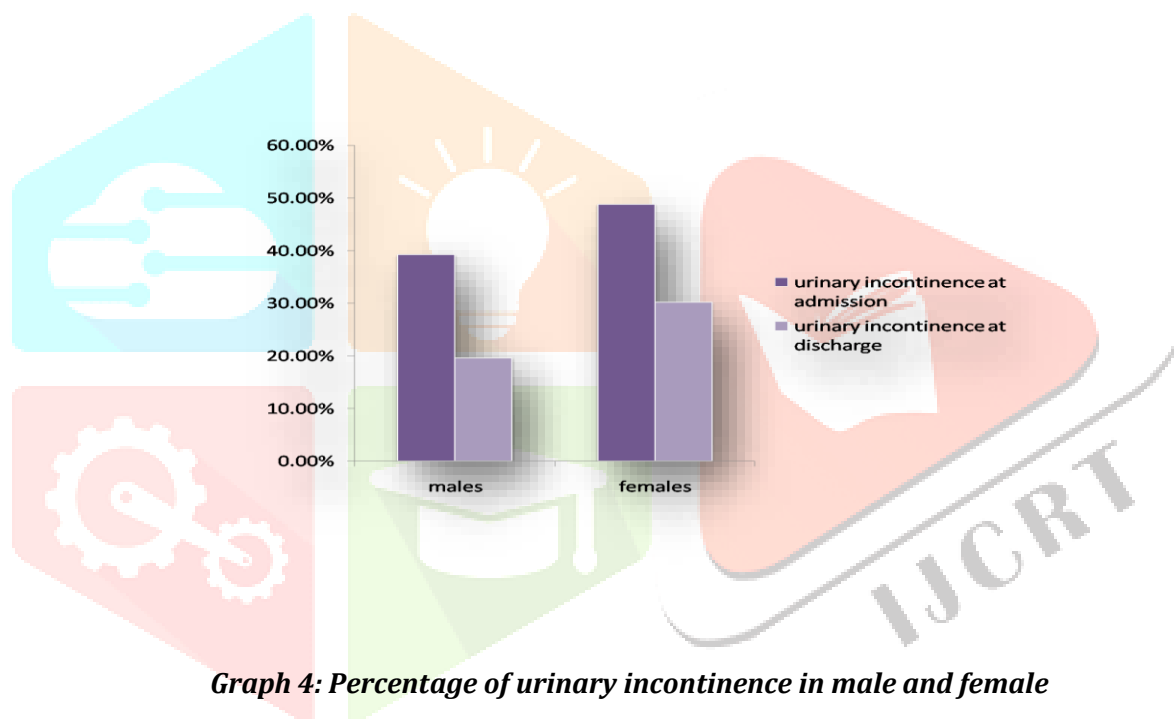
	UI ON ADMISSION	UI ON DISCHARGE
MALES (107) 71.33%	42 (39.2%)	21(19.6%)
FEMALES (43) 39.2%	21 (48.8%)	13(30.2%)

**Table 4: Percentage of urinary incontinence in male and female patients*****Graph 4: Percentage of urinary incontinence in male and female patients***

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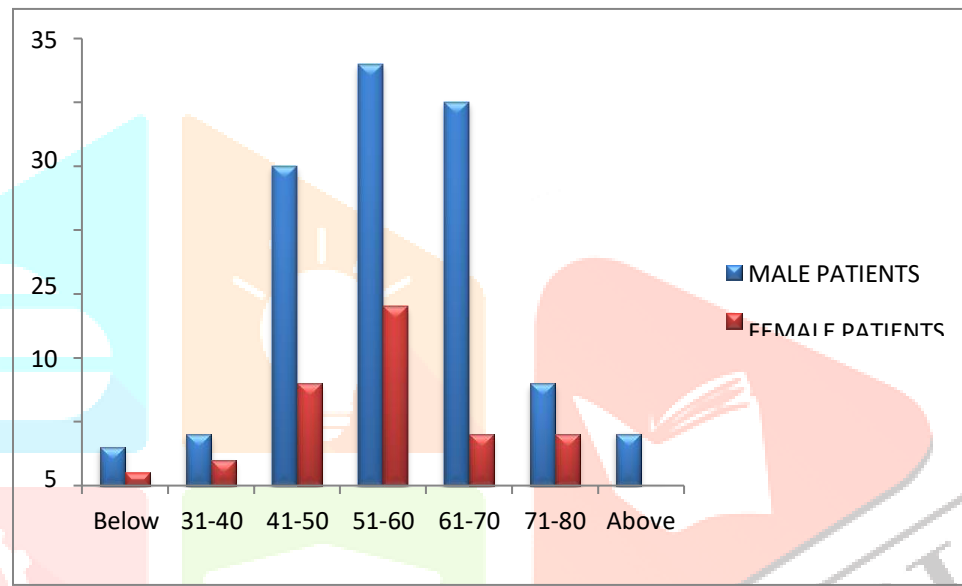
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**Table 4: Percentage of urinary incontinence in male and female patients*****Graph 4: Percentage of urinary incontinence in male and female*****patients**

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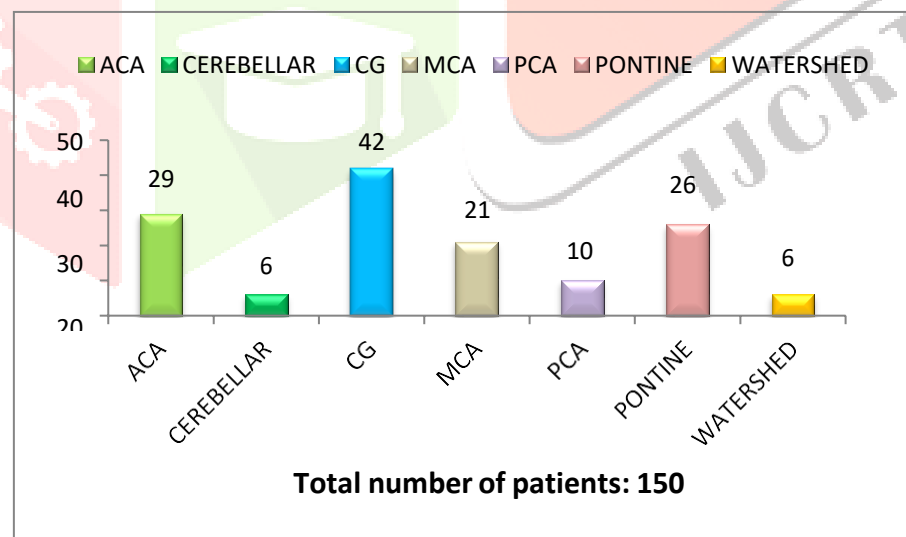
**Table 5: Population of Males and Females According To Age Group**

GENDER	Below 30	31-40	41-50	51-60	61-70	71-80	Above 80
MALE PATIENTS	3	4	25	33	30	8	04
FEMALE PATIENTS	1	2	8	14	4	04	0

**Graph 5: Population of males and females according to age group**

*Prevalence of urinary incontinence on basis of location of infarct:*

TYPE OF INFARCT	NO.OF PATIENTS
ACA	29
CEREBELLAR	6
CG	42
MCA	21
PCA	10
PONTINE	26
WATERSHED	6

**Table 6: Distribution of patients based on location of infarct****Graph 6: Distribution of patients based on location of infarct**

## CONCLUSION

Our study had clearly shown that there is clear association between stroke and urinary incontinence. It states that there is direct proportionality between age and urinary incontinence, as the age of the patient increases, the risk of the Urinary continence increases.

And we concluded that the risk of urinary incontinence is more in females when compared to males. The patients with recurrent stroke have high risk of incidence of urinary incontinence than new stroke.

This study shown that there is increased urinary incontinence in chronic infarct patients than acute infarct patients and study supports recurrent stroke had has high risk of incidence of urinary incontinence than new stroke.

Thus the urinary incontinence should be screened in all stroke centers based on the revised urinary incontinence scale (RIUS) to prevent the risk of urinary incontinence. Patient counseling was provided to patients such as behavioral interventions include timed voiding, prompted voiding, bladder retraining with urge suppression, pelvic floor muscle training, compensatory rehabilitation approaches.

Finally newer strategies to educate healthcare professionals and public about impact of stroke on urinary incontinence and optimal therapy to improve patient quality of life are necessary.

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