ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 8.4
IJAR 2022; 8(2): 490-491
www.allresearchjournal.com
Received: 10-12-2021
Accepted: 15-01-2022

Dr. Junu Devi
Associate Professor, Department of Pathology, Gauhati Medical College and Hospital, Guwahati, Assam, India

Dr. Upasana Kalita
Post Graduate Trainee, Department of Pathology, Gauhati Medical College and Hospital, Guwahati, Assam, India

Corresponding Author:
Dr. Upasana Kalita
Post Graduate Trainee, Department of Pathology, Gauhati Medical College and Hospital, Guwahati, Assam, India

Urine cytopathology: A study in a tertiary care hospital

Dr. Junu Devi and Dr. Upasana Kalita

Abstract
Introduction: Urothelial carcinoma is a very common malignancy worldwide. Urine cytology helps to detect high-grade urothelial carcinoma (HGUC). The Paris System (TPS) Working Group, has proposed and published a standardized reporting system that includes specific diagnostic categories and cytomorphologic criteria for the reliable diagnosis of HGUC. The aim of this study is to analyze the urine cytology smears by The Paris System and to assess the frequency of various categories.
Methods and Methodology: This is a cross sectional study done in a tertiary care hospital. 100 urine samples were received in our department. The data collected were tabulated and categorized according to TPS system: negative for high-grade urothelial carcinoma (NHGUC), atypical urothelial cells (AUC), low-grade urothelial neoplasm (LGUN), suspicious for high-grade urothelial carcinoma (SHGUC), and high-grade urothelial carcinoma (HGUC).
Results: The male: female ratio was 5.2: 1. The percentage of various categories as per the TPS are: NHGUC 48%, AUC 23%, LGUN 1%, Suspicious for HGUC 13% and HGUC 15% respectively. The incidence of HGUC was highest in the age group of 71-80 years.
Conclusion: Urine cytology is a valuable, non-invasive and easy procedure suitable for all patients with urinary symptoms for the detection of infectious conditions, pre-malignant conditions and malignancy specifically HGUC.

Keywords: Urine, Paris system, HGUC

Introduction
Urine cytology helps to detect high-grade urothelial carcinoma (HGUC) as well as low grade urothelial neoplasm (LGUN). The Paris System (TPS) of reporting urine cytology is a valuable standardised diagnostic reporting system which help in diagnosis of various types of urothelial neoplasm. The diagnostic categories of The Paris System (TPS) are based on defined cytological criteria, with a focus on high-grade urothelial carcinoma (HGUC). While the categories 'negative for HGUC (NHGUC)' and 'HGUC' are straightforward, the categories 'atypical urothelial cells (AUC)' and 'suspicious of HGUC (SHGUC)' remain inconclusive. [1]

Methods and Methodology
This is a cross sectional study done in a tertiary care hospital. 100 urine samples were received in our department. The urine samples were centrifuged and smears made from the deposit. The smears were then stained with MGG stain and Papanicolou stain and evaluated under microscope. The data collected were tabulated and categorized according to The Paris System (TPS) which includes the following categories: negative for high-grade urothelial carcinoma (NHGUC), atypical urothelial cells (AUC), low-grade urothelial neoplasm (LGUN), suspicious for high-grade urothelial carcinoma (SHGUC) and high-grade urothelial carcinoma (HGUC).

Results
The male patients were 84 and female patients were 16. M:F ratio was 5.2: 1.

Table 1: Distribution of cases according to age group

Age group	No of cases	Percentage
31-40	12	12%
41-50	26	26%
51-60	23	23%
61-70	25	25%
71-80	12	12%
81-90	2	2%
Total (n=100)	100	

The highest number of cases belonged to the age group 41-50 years

Table 2: Distribution of cases according to The Paris System (TPS) categories

Categories	No of cases
Negative for High grade urothelial carcinoma (NHGUC)	48
Atypical Urothelial cells (AUC)	23
Low grage urothelial neoplasm (LGUN)	1
Suspicious for High grade urothelial carcinoma (SHGUC)	13
High grade urothelial carcinoma (HGUC)	15
Total (n=100)	100

Maximum number of cases in the study were negative for High grade Urothelial carcinoma (NHGUC)

Table 3: Distribution of cases into The Paris System (TPS) categories in relation to age groups:

Age groups	Categories					Total (n=100)
	NHGUC	AUC	LGUN	SHGUC	HGUC	
31-40	8	3	0	1	0	12
41-50	14	6	0	5	1	26
51-60	11	5	0	3	4	23
61-70	13	5	1	3	3	25
71-80	1	4	0	1	6	12
81-90	1	0	0	0	1	2
Total (n=100)	48	23	1	13	15	

HGUC was highest in the age group 71-80 years

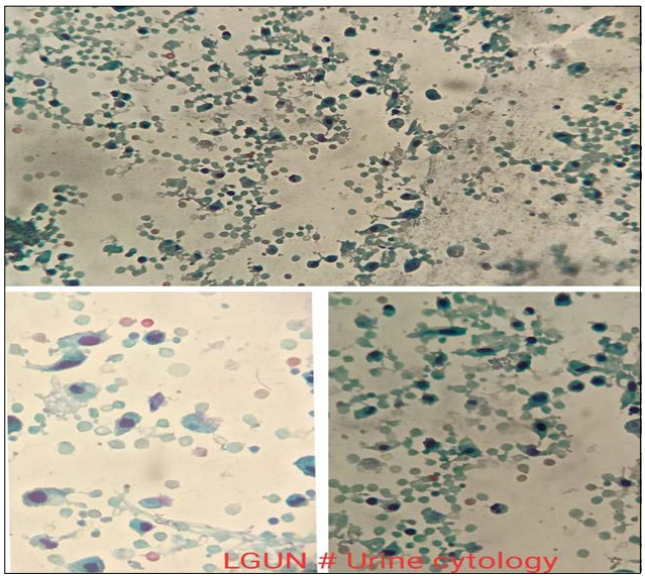
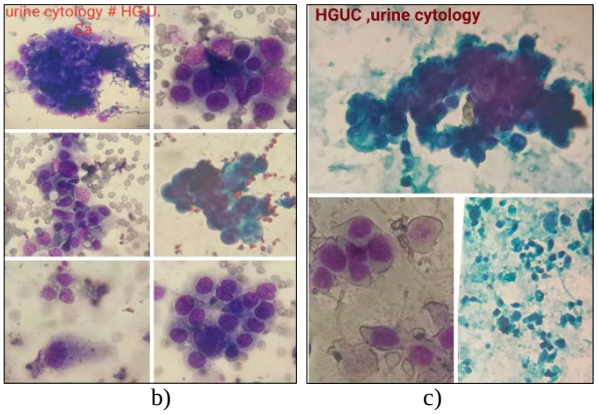


Fig a: Low grade urothelial neoplasm (LGUN)



b) c)

Fig b, c: High grade urothelial carcinoma (HGUC)

Discussion

The male: female ratio (M:F)= 5.2: 1 with male preponderance which correlated with the study by Naveen Chawla *et al*. [2] The youngest patient was 31 years old while the eldest was 90 years old. The maximum number of cases (26%) belonged to the age group of 41-50 years followed by the age group 61-70 years which had 25% cases.

The percentage of various categories as per the The Paris System (TPS) are: Negative for high grade urothelial carcinoma (NHGUC) 48%, Atypical urothelial cells (AUC) 23%, Low grade urothelial neoplasm (LGUN) 1%, Suspicious for HGUC 13% and High grade urothelial carcinoma (HGUC) 15% respectively which is consistent with the study done by Sharada Rai *et al*. [3] The prevalence of High grade urothelial carcinoma (HGUC) was highest (40%) in the age group of 71-80 years.

Conclusion

Urine cytology is a valuable, non-invasive and easy procedure suitable for all patients with urinary symptoms for the detection of malignancy specifically High grade Urothelial Carcinoma (HGUC). The Paris System (TPS) seems to improve the performance of urine cytology by limiting the Atypical Urothelial cells (AUC) category to cases that are more strongly associated with High grade Urothelial Carcinoma (HGUC). [4]

References

1. Tatjana Vlajnic, André Gut, Spasenija Savic, Lukas Bubendorf. The Paris System for reporting urinary cytology in daily practice with emphasis on ancillary testing by multiprobe FISH.
2. Naveen Chawla, *et al*. Role of urine cytology in bladder neoplasm – Cytopathological correlation and review of literature.
3. Sharada Rai, *et al*. A quest for accuracy: Evaluation of the Paris system in diagnosis of urothelial carcinomas.
4. Siva Kota Reddy Vallamreddy, *et al*. Implementation of the Paris system versus institutional diagnosis in the performance of urinary cytology: A 5 years correlative study of 74 cases.