JOURNAL-BASED LEARNING EXERCISES

IBMS CPD

Each article's contents should be read, researched and understood, and you should then come to a decision on each question. The pass mark is 17 out of 20 questions answered correctly. JBL exercises may be completed at any time until the published deadline date. Please select your choice of correct answers and complete the exercises online at: **www.ibms.org/cpd/jbl**

DEADLINE WEDNESDAY 6 FEBRUARY 2019

	Analysis of the cytomorphological features in atypical urine specimens following the application of The Paris System for Reporting Urinary Cytology. Glass R, Rosen L, Chau K *et al. Acta Cytol* 2018; **62** (1): 54–61. Assessment No: 110818		**BK and JC virus: a review.** Pinto M, Dobson S. *J Infect* 2014; **68** (Suppl 1): S2–8. Assessment No: 110618
01	This study assessed the performance and utilisation of morphological features in the diagnosis of benign urothelial lesions.	01	JC and BK are named for the patients from whose samples the viruses were first isolated.
02	The diagnosis of atypia on urinary cytology has not been a cause for concern to cytopathologists.	02	The polyoma genome is organised into three regions which all contain genes encoding antigens associated with tumours.
03	The authors agree with other studies that clusters of cells in voided urine remain a complicated entity.	03	JC virus has been found to bind with an alpha (2, 3) sialic acid N-linked glycoprotein receptor on host cells.
04	Patients identified for the study were those with atypical urine cytology who underwent a subsequent bladder biopsy.	04	BK virus can be found in faeces, respiratory secretions and blood, but the most common site of latency is renal tubular epithelial cells.
05	Large nucleoli were the feature that had the highest intra-observer reliability.	05	JC and BK virus can be detected in the urine of asymptomatic immunocompetent patients; this is a common finding during pregnancy.
06	299 specimens were identified for the study and Cytospin preparations were subsequently prepared.	06	BK virus infection can be associated with interstitial pneumonitis.
07	In 2014, the Papanicolaou Society of Cytopathology recommended a urine cytology diagnostic scheme.	07	CT and MRI scans of the brain and analysis of CSF can help in the diagnosis of progressive multifocal leukoencephalopathy, but brain biopsy is the gold standard test.
08	Hyperchromasia (72.03%) and irregular nuclear borders (73.73%) were commonly found in malignant specimens.	08	Detection of BK virus in urine by PCR can be difficult to interpret clinically.
09	One study found the presence of benign fragments in voided urine carries a 6.6% risk for LGUN.	09	PCR assays for detection of BK virus in plasma are reported to have a positive predictive value of 100%.
10	The study applied The Paris System (TPS) criteria to specimens diagnosed as atypical to compare TPS with the current system of reporting.	10	BK virus-associated nephropathy is associated with reactivation of the virus following renal transplant.
11	The presence of tissue fragments in voided urine can carry a risk for urothelial malignancy.	11	BK viruria is seen in 5–10% of patients post renal transplant.
12	The Paris System for Reporting Urinary Cytology was published in 2016.	12	Haemorrhagic cystitis associated with BK virus occurs in bone marrow transplant patients and incidence is reported to be increased when the patient experiences graft-versus-host disease.
13	Due to the low level of interrater reliability, only 118 of the original 299 cases were analysed.	13	Activity of the JC virus large T antigen has been implicated in colorectal cancers.
14	One study found that pathologists not involved in the creation of TPS had lower rates of AUC reporting.	14	The site of latency for JC virus varies, but includes tonsils, bone marrow and brain.
15	ThinPrep cytology is known to reduce the appearance of papillary tissue fragments.	15	Primary infection with BK and JC viruses is not common in childhood, and patients under 15 years usually experience severe respiratory symptoms.
16	The study authors found that high N/C ratio lacked specificity when seen in groups of cells and was not associated with malignancy.	16	BK virus disease post-transplant is not due to reactivation of latent virus while the patient is on immunosuppressive therapy.
17	Coarse chromatin is more specific than other individual features in the diagnosis of urinary cytology.	17	Progressive multifocal leukoencephalopathy occurs in around 80% of patients with AIDS.
18	The use of TPS criteria did not allow the group to identify higher-risk patients in their study cases.	18	Human polyoma viruses have been found to share less than 60% homology with SV40.
19	An increased nuclear-cytoplasmic ratio was not a prediction of malignancy if seen in single cells.	19	Monitoring of plasma BK viral load can be useful in assessment of a patient with haemorrhagic cystitis.
20	The sensitivity and specificity of TPS when applied to atypical cells reported in the study was 68.5 and 58.1%.	20	Treatment for BK and JC virus is aimed at reducing the patient's immunosuppression rather than specific anti-polyoma virus therapy.

REFLECTIVE LEARNING

01	Read the article by Zheng *et al.* (The Paris System for urine cytology in upper tract urothelial specimens: a comparative analysis with biopsy and surgical resection. *Cytopathology* 2018; **29** [2]: 184–8). Compare their findings with those of the Glass *et al.* JLB paper.	01	Critically evaluate the possible links between polyoma virus infection and cancers.
02	If your department has not introduced TPS for urinary cytology, discuss the pros and cons of introducing the reporting system; alternatively, if your department is utilising TPS discuss how this affected the quality of the reports.	02	Discuss the value of detection and typing of polyoma viruses as a means of identification of unknown persons in forensic cases.