

# **Virology for second year MD students – School of Medicine – the University of Jordan**

Malik Sallam, MD, PhD

## **Activity for the 6<sup>th</sup> lecture**

**Please read each statement carefully and indicate whether it is True or False:**

1. Most HPV-infected people carry and transmit the virus without knowing it, making it very common and difficult to track. **TRUE**
2. Most HPV infections are symptomatic. **FALSE**
3. The nonavalent HPV vaccine protects against nine types of HPV: types 6, 11, 16, 18, 31, 33, 45, 52, and 58. **TRUE**
4. BK and JC polyomaviruses are widespread, with a majority of the human population being exposed to and infected by these viruses, typically during childhood. **TRUE**
5. Podophyllotoxin, podophyllin, and imiquimod are common chemical and immune-modifying agents used in the topical treatment of external anogenital warts caused by HPV. **TRUE**
6. Cervarix is a bivalent HPV vaccine preventing infection by types 6 and 11 used to prevent cervical cancer and pre-cancers caused by these high-risk HPV types in young females. **FALSE**
7. The vast majority of human papillomavirus infections are permanent and would not resolve spontaneously despite the body immune system response. **FALSE**
8. Warts caused by high-risk HPV types can turn into cancers. **FALSE**
9. Human papillomavirus is the most common sexually transmitted infection. **TRUE**
10. Human papillomavirus has a tropism preference for epithelial cells of the skin and mucous membranes, infecting the basal layer and using the host cell differentiation for completing its life cycle. **TRUE**

11. High-risk HPV types are definitive causes of cervical, penile, anal, oropharyngeal, breast and vulvar cancers. **FALSE**
12. BK virus causes progressive multifocal leukoencephalopathy (PML) in AIDS patients, which is a severe brain infection leading to demyelination and neurological damage, and is often fatal. **FALSE**
13. High-risk HPV types have transforming proteins that are related to cancer development. **TRUE**
14. Warts are benign lesions that occur in the mucosa and skin and caused by the benign types of the human papillomavirus. **TRUE**
15. Condyloma acuminata also known as genital warts, are caused by low-risk HPV types 16 and 18 resulting in benign, flesh-colored growths found in the genital and anal areas, spread through skin-to-skin contact during sexual activity. **FALSE**
16. The JC virus, BK virus, and Merkel cell polyomavirus are common, usually harmless papillomaviruses that establish persistent infections, but can reactivate and cause severe disease in immunocompromised individuals. **TRUE**
17. Laryngeal papilloma involves benign wart-like growths on the vocal cords and larynx, caused by HPV types 6 and 11 leading to hoarseness, voice changes, and potential breathing obstruction. **TRUE**
18. HPV types 6 and 11 are known to be responsible of the majority of cervical cancers and precancerous cervical lesions. **FALSE**
19. Human papillomavirus infection is typically a clinical diagnosis in cases where visible lesions are present. **TRUE**
20. Papanicolaou test is a cervical screening method that detects abnormal cells, including precancerous ones, before they can develop into cervical cancers. **TRUE**
21. Treatments for HPV lesions such as surgical excision, laser therapy, and chemical agents are all effective options, with varying clearance rates, recovery times, and recurrence rates. **TRUE**

- 22. Human papillomaviruses are double-stranded enveloped DNA viruses that replicate in the nucleus with more than 200 types. **FALSE**
- 23. Gardasil is a quadrivalent HPV vaccine that prevents cancers and genital warts caused by specific HPV-6, HPV-11, HPV-16, and HPV-18. **TRUE**
- 24. JC virus causes severe, painful hemorrhagic cystitis in bone marrow transplant patients due to immune suppression. **FALSE**
- 25. Skin-to-skin contact is a main route for human papillomavirus transmission. **TRUE**
- 26. Merkel cell polyomavirus is an oncovirus that is well recognized as the major etiological agent of Merkel cell carcinoma which is a rare but rapidly metastasizing skin neoplasm. **TRUE**

**Good luck!**