

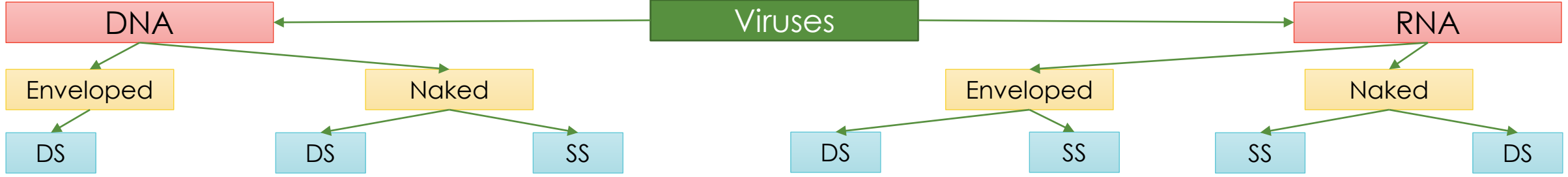
→ Causes Kaposi sarcoma disease



→ Usually no infection in normal people but in immunocompromised

Kaposi-sarcoma associated virus

Done by: Abdelhadi Okasha



Herpesviridae (Ic)

Adenoviridae (Ic) Parvoviridae (Ic)

- Herpes simplex virus 1&2
- Varicella-zoster
- Epstein-Barr virus
- Cytomegalovirus
- HHV 6 (A & B)
- HHV 7
- KSHV

Adenovirus

Parvovirus B19
Bocaviruses

Guidelines:

- SS: single stranded
- DS: Double stranded
- Ic: Icosahedral capsid
- He: Helical capsid
- Co: Complex capsid

0- Introduction

Subfamily ("-herpesvirinae")	Biologic Properties			Examples	
	Growth Cycle and Cytopathology	Latent Infections	Genus ("-virus")	Official Name ("Human Herpesvirus")	Common Name
Alpha	Short, cytolytic	Neurons	<i>Simplex</i>	1	Herpes simplex virus type 1
				2	Herpes simplex virus type 2
			<i>Varicello</i>	3	Varicella-zoster virus
Beta	Long, cytomegalic Long, lymphoproliferative	Glands, kidneys Lymphoid tissue	<i>Cytomegalo</i>	5	Cytomegalovirus
			<i>Roseolo</i>	6	Human herpesvirus 6
				7	Human herpesvirus 7
Gamma	Variable, lymphoproliferative	Lymphoid tissue	<i>Lymphocrypto</i> <i>Rhadino</i>	4 8	Epstein-Barr virus Kaposi sarcoma-associated herpesvirus

1- Structure

- KSHV is lymphotropic and is more closely related to EBV.
- The KSHV genome (~165 kbp) contains numerous genes related to cellular regulatory genes that presumably contribute to viral pathogenesis.

2- Pathogenesis & clinical manifestations

- Contact with oral secretions is likely the most common route of transmission.
- The virus can also be transmitted sexually, vertically, by blood, and through organ transplants. Viral DNA has also been detected in breast milk samples in Africa.
- Clinical manifestations can take the following pathways:
 - 1) Asymptomatic
 - 2) Kaposi sarcomas: angio-proliferative multifocal tumors of the skin, mucosa and less frequently the viscera, it is an endothelial cell neoplasm, so it causes vascular proliferation, resulting in dark or violaceous plaques.
 - 3) body cavity-based lymphoma: it's involved in it's pathogenesis occurring in AIDS patients (Primary effusion lymphoma)
 - 4) multicentric Castleman disease.

2- Pathogenesis & clinical manifestations

Classic (sporadic) KS

Primarily affects older non-HIV infected men of Mediterranean and Jewish origin

Patients present with multifocal mucocutaneous lesions, typically as violaceous lesions on the legs, but may infrequently present solely with KS of the mucosa, genitalia and gastrointestinal tract

Visceral and lung involvement portends a poor prognosis

African (endemic) KS

Causes lymphadenopathy in young males, but manifests in adults with deeply ulcerating tumors of the lower extremity

Presently, it is difficult to differentiate between true endemic KS and AIDS-associated KS

AIDS-related (epidemic) KS

May cause minimal disease or manifest with widespread lesions resulting in significant morbidity and mortality

Skin lesions vary from small papules to large plaques and exophytic or fungating nodules

Lymphedema may be extensive and disproportionate to the extent of the cutaneous disease

Extracutaneous disease is common, and typically involves the oral cavity, gastrointestinal tract, lymph nodes, and lungs

Transplant (iatrogenic) KS

KSHV infection can be associated with fatal KS in this setting

2- Pathogenesis & clinical manifestations

KAPOSI'S SARCOMA (4 TYPES)

1 CLASSIC

- * OLDER MALES
- * SLOW GROWING
- * AFFECT LEGS



2 ENDEMIC

- * YOUNG ADULT MALES
- * AFRICA
- * ↑↑↑ AGGRESSIVE



3 EPIDEMIC

- * AIDS
- * AFFECT BODY PARTS:
 - ~ SKIN
 - ~ GI TRACT
 - ~ MOUTH
 - ~ LUNGS



4 IMMUNOSUPPRESSION THERAPY-RELATED

- * SKIN
- * following ORGAN TRANSPLANTATION



3- Epidemiology

- KSHV is less prevalent compared to other herpesviruses; about 5% of the general population in the US and northern Europe have serologic evidence of KSHV infection.
- Infections are common in Africa (>50%) and are acquired early in life

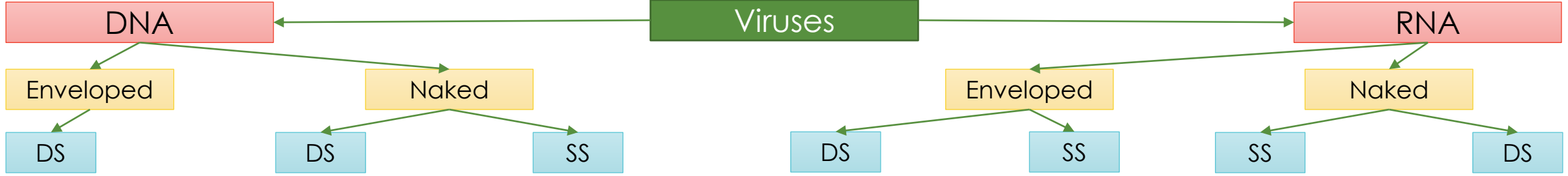
4- Laboratory diagnosis & treatment

- Viral DNA can be detected in patient specimens using PCR assays. Direct virus culture is difficult and impractical.
- Serologic assays are available to measure persistent antibody to KSHV using indirect immunofluorescence, Western blot, and ELISA formats.
- Foscarnet, famciclovir, ganciclovir, and cidofovir have activity against KSHV replication.
- The level of KSHV replication and rate of new Kaposi sarcomas are markedly reduced in HIV-positive patients on effective ART, probably reflecting reconstituted immune surveillance against KSHV-infected cells.



Herpes virus b

Done by: Abdelhadi Okasha



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- Varicella-zoster
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- Cytomegalovirus
- HHV 6 (A & B)
- HHV 7
- KSHV
- Herpes b

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1- Pathogenesis and clinical manifestations

- B virus is a typical herpesvirus that is indigenous in macaques, Old World monkeys in Asia.
- Animal workers and persons handling macaque monkeys, including medical researchers, veterinarians, pet owners, and zoo workers, are at risk of acquiring B virus infection. Individuals having intimate contact with animal workers exposed to the monkeys are also at some risk.
- Transmissibility of virus to humans is limited, but infections that do occur with a high mortality rate (~60%).
- It is designated cercopithecine herpesvirus 1.
- B virus disease of humans is an **acute ascending myelitis** and **encephalomyelitis**

2- Treatment

- There is no specific treatment after the clinical disease is manifest. However, treatment with acyclovir is recommended immediately after exposure.
- γ -Globulin has not proved to be effective treatment for human B virus infections. No vaccine is available.
- The risk of B virus infections can be reduced by proper procedures in the laboratory and in the handling and management of macaque monkeys. This risk makes macaques unsuitable as pets.