



# ***KAZAKH NATIONAL MEDICAL UNIVERSITY OF THE NAME OF S.D.ASFENDIYAROV***

**Theme: *Rheumatic Endocarditis.***

***Student name:***

***Faculty: General medicine***

***Group: 017-02***

***Course: 2***



# PLAN:

## ◆ *Introduction.*

## ◆ *Basic part:*

- *Inflammation*
- *There are multiple ways to classify endocarditis.*
- *Infective endocarditis*
- *What is endocarditis*
- *What are symptoms of endocarditis*
- *Endocarditis develops in the endocardium*
- *In infective endocarditis*
- *Acute rheumatic endocarditis*

## ◆ *Conclusion.*





# ***Endocarditis is an inflammation***

*Endocarditis is an inflammation of the inner layer of the heart, the endocardium. It usually involves the heart valves. Other structures that may be involved include the interventricular septum, the chordae tendineae, the mural endocardium, or even on intracardiac devices. Endocarditis is characterized by a prototypic lesion, the vegetation, which is a mass of platelets, fibrin, microcolonies of microorganisms, and scant inflammatory cells.<sup>[1]</sup> In the subacute form of infective endocarditis, the vegetation may also include a center of granulomatous tissue, which may fibrose or calcify.*





# *There are multiple ways to classify endocarditis.*

*There are multiple ways to classify endocarditis. The simplest classification is based on etiology: either infective or non-infective, depending on whether a microorganism is the source of the inflammation or not. Regardless, the diagnosis of endocarditis is based on clinical features, investigations such as an echocardiogram, and blood cultures demonstrating the presence of endocarditis-causing microorganisms.*





# ***INFECTIVE ENDOCARDITIS***

*Since the valves of the heart do not receive any dedicated blood supply, defensive immune mechanisms cannot directly reach the valves via the bloodstream. If an organism attaches to a valve surface and forms a vegetation, the host immune response is blunted. The lack of blood supply to the valves also has implications on treatment.*







*The endocarditis seen in acute rheumatic fever may set off a more chronic process that can eventually produce heart valve damage. In other words, it can produce rheumatic heart disease. Once rheumatic valvular disease begins, it tends to continually worsen over time. Repeated episodes of rheumatic fever can accelerate the deterioration of the heart valves.*





# *WHAT IS ENDOCARDITIS*

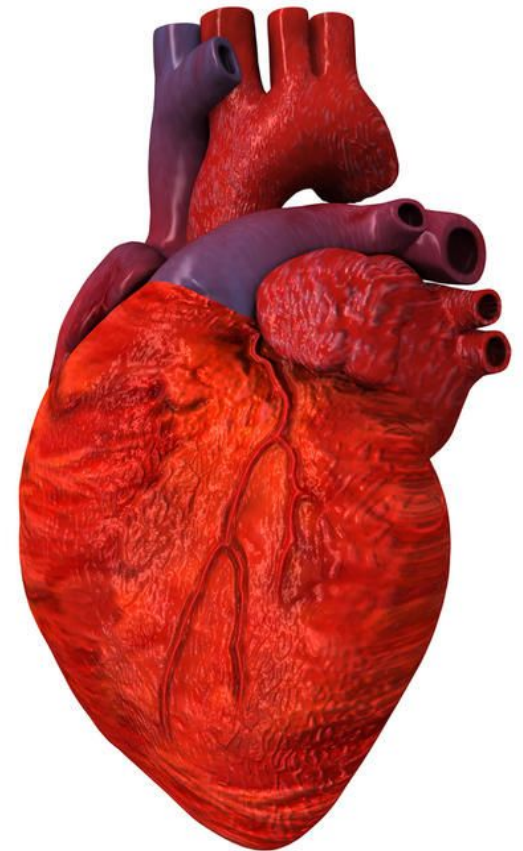
*Infective endocarditis is an infection of the endocardial surface (lining) of the heart, which may include one or more heart valves, the walls, or a septal defect. People at greatest risk of endocarditis have a damaged heart valve, an artificial heart valve or other heart defects*





# *WHAT ARE SYMPTOMS OF ENDOCARDITIS*

*Fever, skin hemorrhages especially under the nails, blood in urine, heart failure, weakness and pain in locations affected by thrombo-emboli from the cardiac vegetations.*







*Fever, weakness, shortness of breath, loss of appetite, weight loss. Signs include anemia, new or changing heart murmur, peripheral emboli and hematuria. Diagnosis is made by blood culture and/or demonstration of valvular vegetations on echocardiography*





# ***ENDOCARDITIS DEVELOPS IN THE ENDOCARDIUM***

*Endocarditis develops in the endocardium, the inner tissue of the heart. It starts if this tissue has been damaged, injured, or infected. Much as a cut on the skin causes a scab to form, damage to the endocardium can lead to the formation of a blood and tissue clot.*





# ***IN INFECTIVE ENDOCARDITIS***

*In infective endocarditis, the clots are caused by bacterial or fungal infection, inflaming and damaging the heart cells. The infection reaches the heart through blood that's carrying a concentration of bacteria, a condition called bacteremia. Once the infectious agent reaches the heart via the blood, concentrate blood's points of entry and exit. Despite the name, infective endocarditis isn't contagious*





# ***ACUTE RHEUMATIC ENDOCARDITIS***

*This heart lesion was an autopsy finding in a girl of 16 years.*

*There is a row of small, firm, grayish vegetations along the **contact line** of the mitral valve cusps. In places the vegetations have fused to form a continuous ridge*







# ENDOCARDITIS, MYOCARDITIS AND PERICARDITIS.

- ◎ *The rheumatic vegetations or verrucae arise due to inflammatory erosion of the valve surface, followed by platelet and fibrin precipitation.*
- ◎ *They are the cardinal feature of rheumatic endocarditis.*
- ◎ *But endocarditis is just one component of the **pancarditis** that occurs in acute rheumatic fever, i.e. there are inflammatory changes in all three layers of the heart, **endocarditis**, **myocarditis** and **pericarditis***





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**Спасибо за внимание!**



**Thank you for attention!**