

Video Sifilis_master_part 1.mp4

- Syphilis is a sexually transmitted infectious disease that can affect almost all organs in a human's body. This disease is caused by the bacterium *Treponema pallidum*. Syphilis is a chronic illness that is curable.
- In Indonesia, most of the syphilis cases are caused by high-risk sexual activity, including heterosexual, homosexual and bisexual acts. The transmission of this disease can happen to anyone regardless of his or her social economic status, whether s/he is living in urban or rural area. Early prevention is the main intervention, but for those already infected, treatment based on self-awareness is critical to cut the transmission cycle and to lower the mortality rate as well as to prevent disability and premature death.
- In general, syphilis is divided into two types. First, Acquired Syphilis, which is transmitted through high-risk sexual activity and blood transfusion contaminated by the bacterium *Treponema pallidum*. Second, Congenital Syphilis, which is transmitted from a mother to her unborn baby during pregnancy
- Acquired Syphilis for adults is divided into four stages including primary, secondary, latent and tertiary. Symptoms of primary stage include a visible single sore at the point of contact, which is called chancre. Symptoms of secondary stage include skin rashes, mainly around the palms of the hands and soles of the feet, and swelling of the lymph glands. When left untreated, someone infected with syphilis will continue to have syphilis in his or her body and it will progress to the latent stage and even tertiary stage. In the latent stage, there are no visible signs or symptoms. In the tertiary stage, syphilis starts to affect the internal organs such as the eyes, heart, blood vessels, liver, bones, joints and central nervous system.
- In addition to adults, babies can also contract syphilis from an infected mother. This is called Congenital Syphilis. Therefore, it is very important for pregnant women to be tested for syphilis. The risk of syphilis transmission to babies can be reduced significantly if the mother receives treatment throughout the pregnancy. Congenital syphilis is divided into two stages. First, early stage of congenital syphilis. At this stage, seventy percent of the cases present no signs or symptoms. Some symptoms such as skin abnormalities in the shape of vesicle or circles can be seen at babies under the age of 1 month. For babies under the age of 2 years, clinical manifestation can be found including fulminant infection, mucocutaneous lesions, osteocondritis, anemia, hepatosplenomegaly and neurosyphilis. Second, advance stage of congenital syphilis, which is found in babies older than 2 years. At this stage, some clinical manifestations are found including interstitial keratitis, limfadenopatia, hepatosplenomegaly, deformed bones, anemia, hutchinson's teeth and neurosyphilis.
- Blood test for syphilis consists of two types of serology tests. First, the Non-Treponema test. Included in this category are RPR (Rapid Plasma Reagin) and VDRL (Venereal Disease Research Laboratory). Second, the Specific Treponema test. This serology test detects specific antibodies for the bacterium *Treponema pallidum*. Included in this category are TPHA (Treponema Pallidum Haemagglutination Assay) and TP RAPID (Treponema Pallidum Rapid). Health workers need both of these serology tests for the diagnosis and management of syphilis patients. Results of Treponema Reactive test confirm whether the patient is currently/has ever been infected by the syphilis bacteria, while the result of non-treponema shows the disease activity. Tests for pregnant women starts with TP RAPID and then continues with RPR Titer when reactive.
- The following video shows the steps in implementing the test:

- Blood collection in veins
 - RPR test
 - TP RAPID test
 - RPR Titer Test
- The results of blood tests in the laboratory need interpretation to confirm the status of syphilis. If RPR is reactive, then it needs confirmation through TP RAPID. If the confirmation test is reactive, then continue with the RPR Quantitative test to determine Titer, which is necessary to determine the status of the disease, to define management of syphilis, and to monitor the treatment. If the confirmation test is non-reactive, then it is classified as false reactive and no treatment is needed. However, the patient should be re-tested one to three months later.
 - TP Rapid can be used for early diagnosis for pregnant women. If reactive, the pregnant woman should be treated as latent stage with three BP injections at one-week intervals. If RPR and TP RAPID are reactive, and the patient has no history of syphilis treatment in the past three months, then patient should be treated based on the diseases stage.
 - RPR Titer 1:2 or 1:4 can be interpreted and treated as advanced latent syphilis with three injections of BP 2.4 million IU at one-week intervals. If Titer is more than 1:8, then it can be interpreted as early syphilis and patient can be treated with one BP injection of 2.4 million IU. In the field, if RPR Titer is not available, it is difficult to differentiate between advance latent syphilis and early latent syphilis since the difference is in the duration of the infection. Therefore, the disease can only be classified as latent syphilis (treated with three injections of BP 2.4 million IU at one-week intervals)

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- Prior to starting the treatment process, please prepare the materials/equipment which include Benzathine Penicillin (BP) 2.4 million IU, aquabidest, 10 cc syringe, 1 cc syringe, 18G needle, alcohol swab, and sterile gauze. BP is in powder form; therefore, 9cc of aquabidest is needed to dissolve it.
- Once BP is dissolved, skin test is needed to test patient's allergic reaction prior to BP injection. The steps for the skin test include:
 - Take 0.1 cc of already dissolved BP by using a 1 cc syringe, and then dilute it with aquabidest until it reaches 1 cc.
 - Disinfect the volar surface of the forearm by using an alcohol swab
 - Inject 0.02 cc of the solutions intradermal or until the surface of the skin is raised with a diameter of 0.5 cm
 - Mark or circle the injected area of the skin
 - Wait for 15 to 30 minutes and observe to see if the diameter of the bump increases
 - If there is a bump, and/or redness with a diameter of more than 1 cm, or accompanied by itching, it could be interpreted that patient is allergic to BP or other types of penicillin antibiotic
 - For patients allergic to penicillin, provide treatment with doxycycline or erythromycin based on suggested doses.
- If there is no allergic reaction, BP injection can be done with 18G needle intra muscular on the buttock. These steps include:
 - Determine the injection area at the one-third part between SIAS to Os. Coxygeius

- Disinfect the surface of the skin by using an alcohol swab
- Inject the syringe perpendicular to the surface of the skin
- Aspirate first to make sure there is no blood at the tip of the syringe
- Inject BP slowly until finished
- Doses should be adjusted for babies or children infected with congenital syphilis. After BP injection, have patient wait for 15 to 30 minutes while laying down in the physician room until the soreness disappears or is reduced
- Conduct treatment evaluation by using RPR Titer. For active syphilis, do evaluation at the first, 3rd, 6th, 9th, 12th, 18th, and 24th month. For latent syphilis, do evaluation once every three months in the first year and once every six months in the second year. If there is a decrease in RPR Titer by four times over six months after the treatment, for example from 1:64 to 1:16 or lower, then treatment is considered successful. If Titer does not decrease by four times, evaluation is needed to check for re-infection.

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- Despite passing the skin test to measure the patient's allergic reaction to BP, there is still the possibility of anaphylactic shock for some time after the treatment.
- Use ABC method to handle anaphylactic shock with help from a colleague.
 - A: AIRWAY – Check the airway
 - B: BREATHING – Ensure smooth breathing. If needed, perform mouth to mouth breathing aid
 - C: CIRCULATION – Ensure smooth blood circulation. If needed, do heart-lung resuscitation.
- If that patient's condition does not improve, inject Epinephrine or Adrenalin based on suggested doses and refer the patient to the nearest hospital after his/her condition is stable
- A side effect after syphilis treatment is Jarisch-Herxheimer. This reaction can start a few hours after the treatment and can last for 24 hours. The symptoms include fever, muscle or joint pain, headache, bloatedness, nausea, and for some people, it includes diarrhea. These reactions show that the patient's health is improving.
- Syphilis infection can be prevented in the same way other sexually transmitted illnesses such as HIV can be. Use ABCDE principles as follow:
 - A: ABSTINENCE – Abstain from sexual activities
 - B: BE FAITHFUL – Engage in sexual activities with only one partner
 - C: CONDOM – Always use a condom for high-risk sexual activities
 - D: DRUG – Treat with BP when diagnosed with syphilis
 - E: EDUCATION – Educate on preventative measures to prevent transmission or contraction of syphilis
- Monitor regularly based on the schedule written in the syphilis treatment card