

RUBELLA VIRUS

- Rubella (RUBEOLA) is an acute viral disease characterized by a small-spotted exanthema, generalized lymphadenopathy, moderately severe fever and fetal damage in pregnant women.

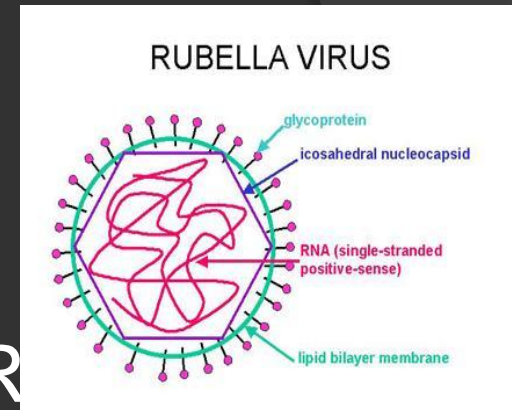


Classification of the pathogen

- ◉ The Kingdom of
- ◉ Vira Viruses Sub-kingdom
- ◉ RNA-containing
- ◉ Family Togaviridae
- ◉ Genus Rubivirus

Morphology and chemical composition of the virion

- Spherical shape
- Diameter 60-70 nm
- Genome - single-stranded plus-stranded RNA
- Capsid with cubic type of symmetry
- External lipid-containing membrane with sparse spines 8 nm in length
- Protein C, proteins E1 and E2 (located in the outer shell of the virion)



Особенности строения

- Наличие агглютининов
позволяет агглютинировать эритроциты голубей, гусей
придаёт гемолитические свойства
- Нейраминидазная активность
- Белок С – внутренний нуклеокапсидный антиген
- Белок Е1 участвует в прикреплении вируса к клетке и формировании димера с Е2
- Белок Е2 – протективный антиген, к которому вырабатываются вируснейтрализующие антитела

Epidemiology

- Anthroponous infection
- The source is a person who has a clinically or asymptomatic form of rubella (represents an epidemic danger from the second half of the incubation period and within 7 days of the onset of the rash) or a child with congenital rubella (secretes the virus into the environment with nasopharyngeal secretions, urine and feces for 2 years)

- Susceptible staff are the most sensitive children, but it is possible to infect adults as well, especially in organized collectives (servicemen)
- Special risk is for pregnant women, the infection leads to intrauterine infection of the fetus
- Transmission routes: airborne (in people who communicate with the source of infection), transplacental (this transfer is the link in the chain of the aerogenic mechanism: children with congenital rubella transmit the virus to the surrounding airborne droplets)
- The virus, persisting in the patient's congenital rubella, has increased virulence

Патогенез приобретённой краснухи

- Входные ворота – слизистые оболочки верхних дыхательных путей
- ↓
- Проникновение в регионарные лимфатические узлы, размножение
- ↓
- Поступление в кровь
- ↓
- Распространение по организму
- ↓
- Оседание в лимфатических узлах и эпителии кожи, развитие в них иммунной воспалительной реакции

Clinical picture with acquired rubella

- The incubation period is 11-24 days
- Slight fever, mild catarrhal symptoms, slight weakness, malaise, mild headache, sometimes pain in the muscles and joints of conjunctivitis, an increase in the posteroderma and occipital lymph nodes, the appearance of a maculopapular rash all over the body
- Forms of acquired rubella:
 - 1) typical (with the appearance of a rash)
 - 2) atypical (without rash)
 - 3) inpatient (subclinical)

Неосложнённая типичная форма приобретённой краснухи

- Протекает легко, особенно у детей
- Симптомы общей интоксикации выражены слабо
- Температура может оставаться нормальной на всём протяжении болезни (22%) или повышаться до субфебрильной (48%). Продолжительность лихорадки – 2-4 дня, дольше 5 дней у 10%
- Ринит, фарингит, умеренный сухой кашель, неприятные ощущения в горле (першение, сухость)
- Возможны небольшая гипотензия, увеличение печени и селезёнки
- Лейкопения и увеличение числа плазматических клеток в периферической крови
- Появление экзантемы на 1-4 день сначала на лице, а затем на туловище и конечностях (более обильна на разгибательных поверхностях конечностей, на спине, пояснице, ягодицах).

- Elements of the rash are located on the background of normal unpermeated skin
- The main element of the rash is a small spot with a diameter of 5-7 mm. It does not rise above the surface of the skin, it disappears by pressing on the skin or stretching it
- Along with spots,
 - to appear flat roseola
 - 2-4 mm in diameter, less often
 - papules are observed
- Elements of the rash, as a rule, s



Atypical form of acquired rubella

- Light curren
- Without exanthema
- Light catarrh of the upper respiratory tract
Moderate lymphadenopathy

Immunity

- In the case of acquired rubella - persistent for life, antibodies persist throughout life, but their titer gradually decrease
- In the case of congenital rubella - less resistant, as its formation occurs in conditions of immature immune system of the fetus

Laboratory diagnostics

- Virological method - isolation and identification of the virus from the swill from the mucous membrane of the nose and throat, blood, urine, internal organs of dead children (complicated, almost not used in practice)
- The serological method is the determination of IgG titer in paired sera and cerebrospinal fluid with an interval of 10-14 days (a diagnostic increase is 4 and more times), RSK, RIF and ELISA (detection of specific IgM), determination of IgG avidity index
- PCR - detection of the RNA of the rubella virus

Specific prevention and treatment

- The main goal of immunization is the prevention of intrauterine infection of the fetus in pregnant women
- The main contingent is girls aged 14-15
- The national vaccination schedule includes prophylactic vaccination of children aged 12-15 months, revaccination at 6 years Sample vaccine prophylaxis in seronegative women of childbearing age
- Live vaccine from attenuated strains Moderately expressed vaccine reaction, in 95% of the immunized, the development of anti-rash anitol
- Specific treatment is not developed