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Medizinische
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Chlamydia diagnostics

披衣菌診斷



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Clinical manifestations



Chlamydia trachomatis

砂眼 披衣菌

C. trachomatis: Serotypes D-K (2)



Acute infections 急性泌尿生殖道感染

- Acute urogenital infections in women are mostly shown up as cervicitis (inflammation of the cervix uteri) and in men as urethritis

Chronic infections 慢性感染—症狀不明顯

- Clinical symptoms are absent or only weakly present, particularly in women (70-80%, in men around 50%)

⇒ Ascension of pathogen into the upper genital tract and development of chronic infection

⇒ Severe inflammation with occlusion of fallopian tubes possible

盆腔炎 (**Pelvic Inflammatory Disease** PID: inflammation of upper female reproductive organs)

輸卵管

C. trachomatis: Serotypes D-K (3)



Late consequences of chronic infection (serotypes D-K)

反應性關節炎

Reactive arthritis (Chlamydia-induced arthritis CIA)

In 1-3% of patients with urogenital C. trachomatis infection (inflammatory reaction via metabolically active pathogen in joints)



Source: <http://iahealth.net/>;

女性不孕症

Sterility in women

($\leq 40\%$ of women with untreated C. trach. infections get PID \rightarrow Of those 20% will become infertile)

男性生育能力

Fertility problems in men (chronic epididymitis)

C. trachomatis: Serotypes D-K (4)



60-70% of infections are transmitted during delivery

垂直感染-生產時



Complications during pregnancy
(Premature delivery/
amniorrhexis)

懷孕期間併發症-早產/羊膜破裂

Conjunctivitis

結膜炎

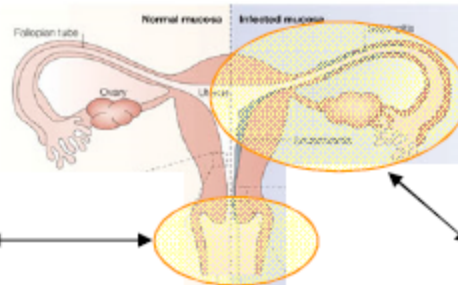
Rare: neonatal pneumonia

Routine examination of pregnant women is important

Chlamydia trachomatis Diagnostics (2)



Serotypes D-K:



Acute infection
Urogenital; conjunctivitis,
pregnancy complications,
newborn conjunctivitis or
pneumonia

Chronic infection
Upper genital tract;
reactive arthritis

**Clinical picture
(Symptoms)**

Method of choice
(particularly during
pregnancy)

Helpful

**Helpful,
useful**

Often not
possible

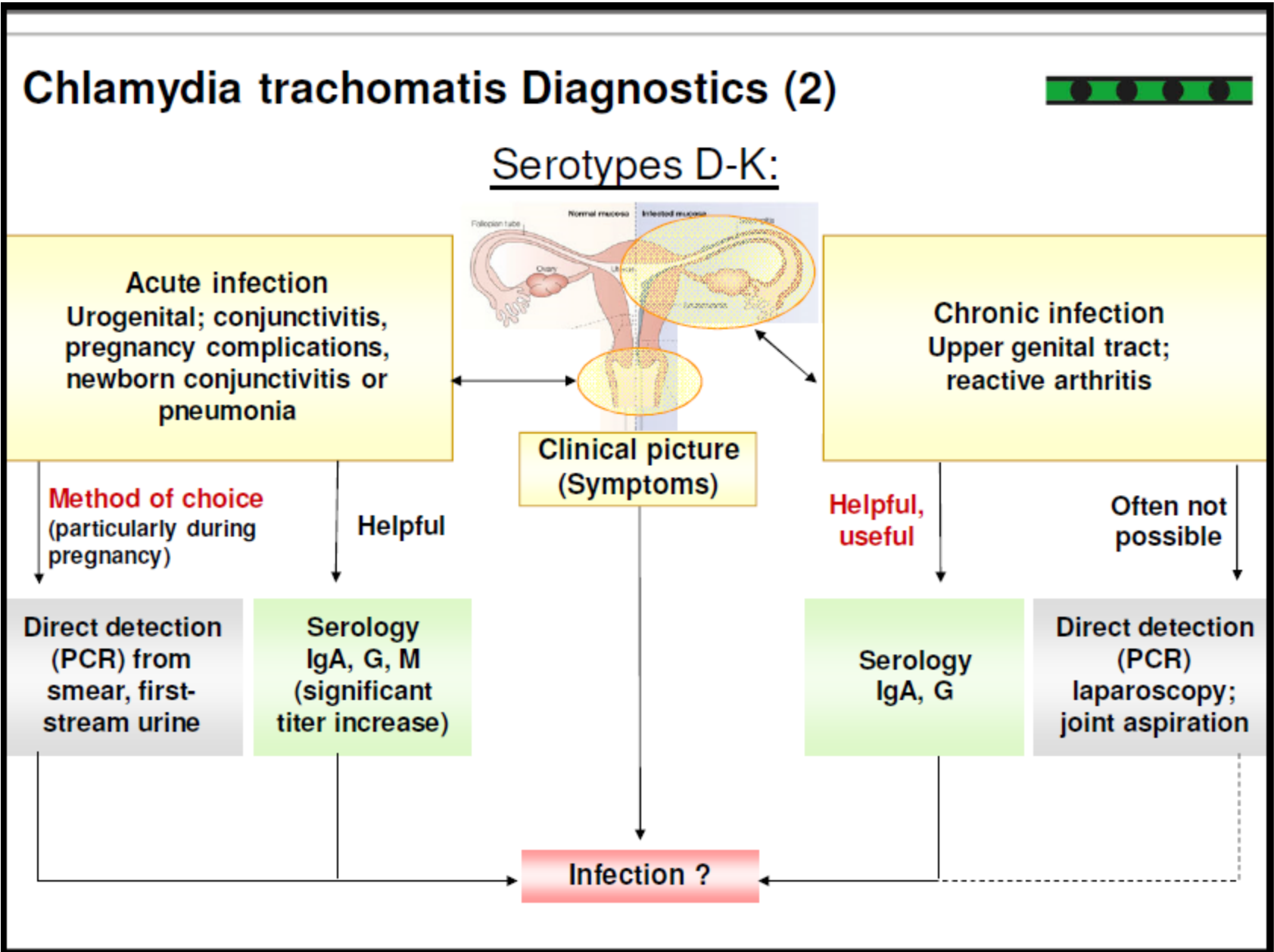
Direct detection
(PCR) from
smear, first-
stream urine

Serology
IgA, G, M
(significant
titer increase)

Serology
IgA, G

Direct detection
(PCR)
laparoscopy;
joint aspiration

Infection ?



Anti-C. trachomatis ELISA: Prevalence



n	Panel	Anti-C. trach. positive results		
		IgA	IgG	IgM
100	Patients positive by direct detection	54 %	67 %	27 %
134	High-risk group	16 %	43 %	12 %
54	Patients with reactive arthritis	6 %	28 %	13 %
250	Pregnant women	7 %	8 %	2 %
88	Children (0-10 years old)	0 %	0 %	1 %
500	Healthy blood donors	6 %	13 %	2 %

- Much higher Ab prevalence (IgA, G, M) in patients with a proven C. trachomatis infection and in the high-risk group
- Also a higher prevalence in patients with reactive arthritis than in healthy blood donors

Clinical manifestations



Chlamydia pneumoniae

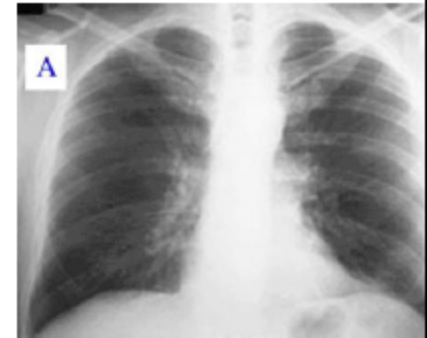
肺炎披衣菌

Chlamydia pneumoniae

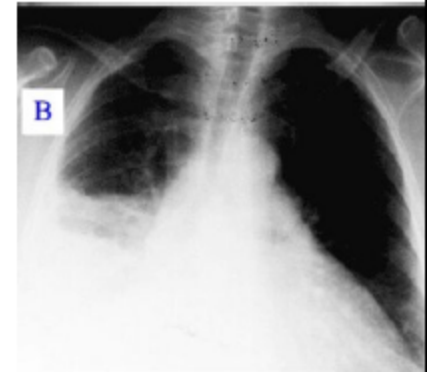


- ~ 50% of infections proceed asymptotically or may cause a mildly sore throat 咽喉痛
- All other cases of infections are mainly characterized by persisting cough, headache and fever 持續咳嗽 頭痛 發燒
- Possible diseases:
 - Bronchitis 支氣管炎
 - Pharyngitis 咽炎
 - Sinusitis 鼻竇炎
 - Otitis media 中耳炎
- ~ 10% of cases of community acquired pneumonia are typical or atypical *C. pneumoniae* infections
- Chronic illnesses associated with *C. pneumoniae* are:
 - Bronchial asthma 支氣管哮喘
 - Coronary heart diseases 冠狀動脈心臟疾病
 - Atherosclerosis 動脈粥樣硬化

Healthy lung



Pneumonia



Chlamydia pneumoniae Diagnostics (2)



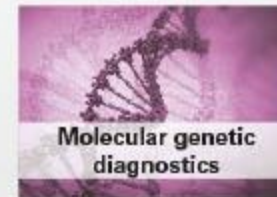
Serology

- determination of IgA, IgG and IgM is the method of choice
→ MIF (micro immune fluorescence test) is still gold standard
- Detection of IgM in primary infection (children); in case of adults most often only IgA together with IgG are detectable
- High IgG and IgA prevalence: Therefore detection of an acute infection is only possible via a clear increase in titers or seroconversion (paired samples taken at an interval of at least 3 weeks)
- Therapy monitoring by means of serology is of limited use, since antibody concentrations do not correlate with response to treatment.





Thank you for your attention!



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