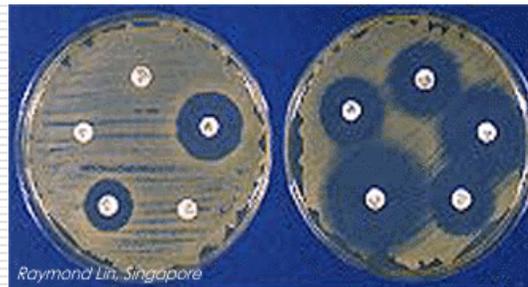


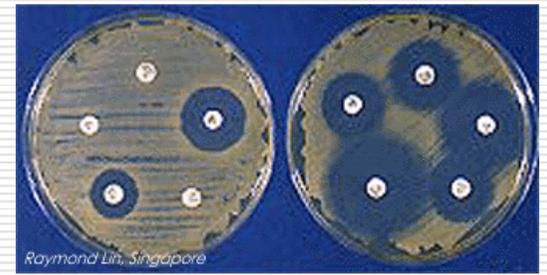
Resistance of respiratory tract pathogens in Lithuania



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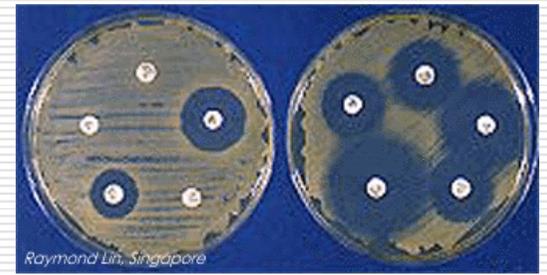
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Background:



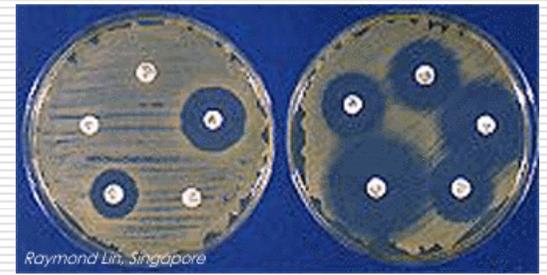
- ✘ The most prevalent bacteria causing community-acquired respiratory tract infections are *Streptococcus pneumoniae*, *Streptococcus pyogenes*, and *Haemophilus influenzae*.
 - ✘ In all of them an increase of resistance to several first- or second-line antibiotics has been observed in recent decades.
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Background:



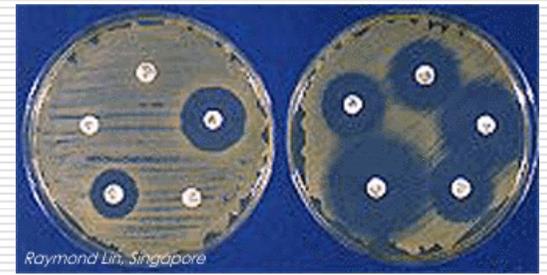
- x In *S.pneumoniae*, the high prevalence of resistance to penicillin, and macrolides considerably limit the therapeutic options for the different conditions in some countries.
 - x Empirical prescription of macrolides cannot be considered a therapeutic option for *S.pyogenes* any longer, given the impressive increase of resistance to this family of antibiotics, particularly in the countries with high prevalence of resistance.
 - x A substantial proportion of *H.influenzae* strains are resistant to aminopenicillins due to the production of beta-lactamases. However, the wide-spread use of oral cephalosporins and amoxicillin-clavulanate associations may have contributed to the emergence of strains with PBP3 alterations leading to loss of susceptibility to aminopenicillins in the absence of beta-lactamase production.
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Aim of the study:



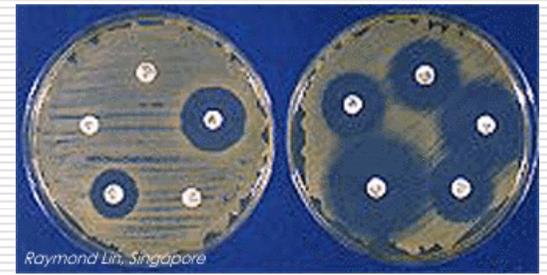
- ✘ To investigate the current situation of antimicrobial resistance of clinical respiratory isolates of *S.pneumoniae*, *S.pyogenes*, and *H.influenzae* in Lithuania.
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Materials and methods:



- ✘ Susceptibility surveillance including 430 *Streptococcus pyogenes*, 290 *Streptococcus pneumoniae*, and 357 *Haemophilus influenzae* consecutive isolates was carried out in 8 voluntary laboratories during 2005.
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Materials and methods:



- ✘ Antimicrobial susceptibility tests to penicillin, ampicillin, and erythromycin were performed by disk diffusion method.
 - ✘ The test conditions and breakpoints recommended and accepted by the Clinical Laboratory Standards Institute were followed.
 - ✘ Beta-lactamase production of *H.influenzae* was tested with nitrocefin test.
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Results:

Table 1. Prevalence of resistance of *S.pyogenes* to erythromycin

Antibiotic	Number of strains	% Resistant isolates
Erythromycin	430	8,6

Results:

Table 2. Prevalence of resistance of *S.pneumoniae* to penicillin and erythromycin

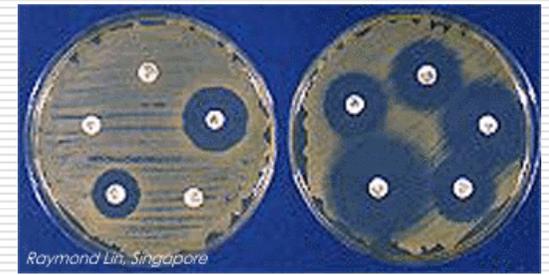
Antibiotic	Number of strains	% Resistant isolates
Penicillin	290	4,1
Erythromycin	290	10,7

Results:

Table 3. Prevalence of resistance of *H.influenzae* to ampicillin

Antibiotic	Number of strains	% Resistant isolates
Ampicillin	357	17,9

Conclusions:



- x Prevalence of penicillin resistance among *S.pneumoniae* isolates was relatively low.
 - x The results suggest that erythromycine might have limited value for the empirical treatment of the *S.pneumoniae* and *S.pyogenes* infections.
 - x High resistance rates of *H.influenzae* to ampicillin were found in our study. All ampicillin resistant *H.influenzae* strains were beta-lactamase positive.
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