COMPARATIVE STUDY OF STREPTOCOCCAL PHARYNGITIS IN NABEUL: CLINICAL JUDGMENT VERSUS RAPID ANTIGEN TEST VERSUS NEAPOLIS SCORE ASSOCIATED WITH RAPID ANTIGEN TEST

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Background

- Pharyngitis is the cause of many pediatric consultations.
- Streptococcal pharyngitis (SP), which justifies antibiotics' prescription, accounts for only 15 to 30% of cases.
- Examination of the throat does not distinguish between SP and viral pharyngitis.
- Currently, there is no international consensus on the management of pharyngitis in children.

Aim:

to compare three strategies of management of pharyngitis in terms of efficiency and economic profitability by taking **the throat culture as a reference**.

Methods: (chart 1)

- We carried out a prospective study over a period of 6 months on children aged from 2 to 15 years diagnosed with pharyngitis.
- We divided the **180 children included into 3 groups of 60** each representing the **3 strategies**:
 1. *strategy based on clinical judgment only*,
 2. *strategy based on rapid antigen test (RAT) only*
 3. *strategy based on the Neapolis score associated with RAT.*

Neapolis score

criteria	Points
Fever > 38 °C	+1
Absence of Cough	+1
Painful cervical nodes	+1
Tonsillitis (swelling or exudate)	+1

Results:

- The prevalence of SP was 18.9% in our study.
- A relationship was established between the SP and difficulty swallowing, absence of cough, exudate tonsillar and enlarged cervical nodes.
- Multivariate analysis showed that only the absence of cough had an independent discriminatory value.
- The sensitivity and specificity of the first strategy were **87.5%** and **11.5%**, respectively. Those of the second strategy were **83.3%** and **97.9%**. Those of the 3rd strategy were **85.7%** and **89.1%**. (Table 1, 2, 3, 4).

Chart 1: Study Protocol

- The 1st and 2nd strategies were the most expensive with a total cost of 344 Dinars and 337.8 Dinars respectively.
- The total cost of the 3rd strategy was 287 Dinars (1Euro=2,6Dinars).
- All cultured Streptococcus strains were completely sensitive to betalactams and macrolides, and resistant to tetracyclines in 50% of cases.

Comments:

- The clinical examination does not allow us to distinguish between streptococcal and non-streptococcal pharyngitis.
- It leads to overconsumption of antibiotics and leads to an increase in the rate of resistant germs.
- **The strategy based on RAT alone and that based on RAT combined with Neapolis score are the most effective, but the 3rd strategy remains the most economical.**

Conclusion:

- In light of our work, we recommend adopting the third management strategy (**RAT associated with Neapolis score**) as it has the best cost-effectiveness.
- We then propose to integrate it into a international protocol for the management of children's pharyngitis.

Table1: Results of strategy 1

Clinical diagnostic of SP	Positive Culture	Negative Culture	Total N=60
Yes	7	46	53
No	1	6	7

Table2: Results of strategy 2

RAT Resultat	Positive Culture	Negative Culture	Total N=60
Positif	10	1	11
Negatif	2	47	49

Table 3: Results of strategy 3

NeapolisScore	RAT	Positive Culture	Negative Culture	Total N=60
Between 0 and 1	Not done	0	9	9
	Positif	10	2	12
Between 2 et 3	Negatif	2	32	34
More than 4	Not done	2	3	5

Table 4: Efficiency comparaison strategies

Groups	Sensibility % (IC)	Specificity % (IC)	PPV % (IC)	PNV % (IC)
Group 1	87,5% (46,7%-99,3%)	11,5% (4,8%-24,1%)	13,2% (57,1%-99,5%)	85,7% (42%-99,2%)
Group 2	83,3% (50,9%-97,1%)	97,9% (87,5%-99%)	90,9% (57,1%-99,5%)	95,9% (84,9%-99,3%)
Group 3	85,7% (56,2%-97,5%)	89,1% (75,-%-95,9%)	70,6% (44%-88,6%)	95,3% (82,9%-99,2%)

References

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