

Clinical Reasoning Handout: URI Symptoms Sore Throat

1) Pearls

Background:

- Sore throat is one the most common symptoms evaluated in primary care
- Almost 5% of patient report “sore throat” as the primary reason for their office visit, making it the second-most common reason for an office visit.
- Streptococcal pharyngitis is responsible for only a minority of cases of sore throat.

Differential Diagnosis:

INFECTIOUS	Probability (%)	Comments
Viral	50-80	Adenovirus, influenza virus, parainfluenza virus, RSV
Group A Streptococcus pyogenes		
Adult	5-10	Peritonsillar abscess, rheumatic fever, and acute glomerulonephritis
Child	20-35	
Epstein-Barr Virus (infectious mononucleosis)	1-10	Can result in splenic rupture and respiratory compromise
Chlamydia pneumoniae	2-5	Consider in those who are at high risk for STI's
Mycoplasma pneumoniae	2-5	Elderly, less ill, and pharyngeal inflammation
Neisseria gonorrhoeae	1-2	Consider in those who are at high risk for STI's
Haemophilus influenza type B	1-2	
Candida	<1	Immunosuppressed and inhaled steroids

NON-INFECTIOUS	Comments
Gastroesophageal Reflux Disease	Stomach acid irritates pharyngeal tissue
Postnasal Drip (allergic rhinitis or other respiratory illness)	Chemical irritation and repeated drying
Acute Thyroiditis	Anterior neck pain and associated with local tenderness to palpation
Persistent Cough	Caused by any of a variety of infectious and non-infectious stimuli
Trauma	External or internal
Referred Dental Pain	

Evaluation:

- When trying to differentiate GABHS from other causes of pharyngitis, focus on the following areas: 1) measured or subjective fever, 2) absence of cough, 3) tonsillar or pharyngeal exudates, 4) cervical adenopathy, and 5) tonsillar enlargement (see clinical prediction rule below).
- In most cases, history alone is sufficient to distinguish infectious from non-infectious cause
- But don't forget red flags.

Red Flags

Finding	Condition
Hot-potato voice, toxic appearance, altered mental status	Peritonsillar abscess
Splenic enlargement	Infections mononucleosis with increased risk for splenic rupture
Increased respiratory rate, extremely enlarged tonsils, and significant cervical adenopathy	Respiratory compromise due to upper airway obstruction, rarely associated with GABHS pharyngitis and infectious mononucleosis

Clinical Prediction Rule for the Diagnosis of Group GABHS Pharyngitis

1. Add up the points for your patient

Symptom or Sign	Points
History of fever or measured temperature >38°C	1
Absence of cough	1
Tender anterior cervical adenopathy	1
Tonsillar swelling or exudates	1
Age less than 15 years	1
Age equal to or greater than 45 years	-1
Total:	

2. Find their risk of strep below

Points	Likelihood Ratio	Percentage with Strep	
		(Patients with Strep/Total)	
-1 or 0	0.05	1% (2/179)	Do not test, offer reassurance
1	0.52	10% (13/134)	Order rapid test and culture
2	0.95	17% (18/109)	Order rapid test
3	2.5	35% (28/81)	Order rapid test
4 or 5	4.9	51% (39/77)	Consider empiric antibiotics

Management:

- Viral pharyngitis is self-limited, and only symptomatic treatment is indicated. (Strategies include NSAIDs or acetaminophen for fever and sore throat pain, gargling with 2% viscous lidocaine for severe pain, OTC sprays, and gargling with salt water. None of these have been evaluated in RTC's. Herbal tea has been shown to be more effective than placebo for pain relief.)
- Randomized controlled trials have shown that patients given penicillin experience about one fewer day of sore throat than patients given placebo (approximately 4 days of symptoms with antibiotic versus 5 days without). Prevention of rheumatic heart disease has not been measured in recent RCT.
- Treat GABHS because of potential for rheumatic heart disease complication. Drug of choice is Penicillin or Erythromycin for Penicillin allergic patients. (see dose recommendations on last page)

Key learning Points for Improved Clinical Reasoning:

1. Stop reflexive rapid strep testing in older adults with sore throat.
(error in assessing prevalence – availability bias)
2. Consider the possibility of neisseria gonorrhoea in adolescent patients with sore throat.
(error in assessing prevalence – regret bias)
3. Appropriately consider the weight of a normal temperature and absent lymph nodes.
(error in interpreting data – ignoring negative evidence)

Reference:

Sloane, P.D., Slatt, L.M., Ebell, M.H. and Jacques, L.B. eds. *Sore Throat*. Essentials of Family Medicine: Lippincott, Williams and Wilkins, 5th edition, pp. 313-323.

Pharmacotherapy Recommended for Treatment of GABHS Pharyngitis

Drug	Dosing Range	Adverse Effects	Comment
First Line			
Penicillin VK	Children <12 yo: 25–50 mg/kg/day divided, Q 6–8 hours (max 3 g/day) Adults/children >12 yo: 250 mg PO QID for 7 to 10 days or 500 mg PO TID for 7 to 10 days	Mild diarrhea, vomiting, nausea	Compliance a problem, especially with QID dosing. Adjust dose for renal insufficiency. Available in suspension.
Amoxicillin	Adults/children >12 yo: 500 mg PO TID for 7 to 10 days or 1 g PO BID for 6 days. Children <12 yo: 25–100 mg/kg/day divided Q 8 hours (max 2–3 g/day)	Rash in patients with infectious mononucleosis	Available as tablet, capsule, chewable tablet and oral suspension.
Erythromycin ethyl succinate	400 mg PO TID for 7 to 10 days Children <2 yo: 40 mg/kg/day in 2 divided doses (max 1600 mg/day)	Nausea or vomiting, abdominal pain	For penicillin- and amoxicillin-allergic patients. May cause drug to drug interactions. Available as tablet or oral suspension.
Second-line			
Azithromycin	Adults: 500 mg PO QD on day 1, 250 mg PO QD on days 2–5 Children >2 yo: 12 mg/kg (days 1–5)		Available as tablet or oral suspension.
Cefixime	8 mg/kg (children) PO QD for 10 days. Children >50 kg or >12 yo and Adults: 400 mg/day divided Q 12–24 hours		
Dexamethasone	10 mg IM injection once for ages 12 and older		For severe sore throat only or pharyngeal edema

2) Clinical Question: What are the return to play guidelines for patients with infectious mononucleosis?

Search Strategy:

1. PubMed keyword search using “return to play guidelines mononucleosis splenomegaly” yielded no results.
2. The same search omitting “splenomegaly” produced:

Results: 3

- [Mononucleosis and athletic participation: an evidence-based subject review.](#)
 1. Putukian M, O'Connor FG, Stricker P, McGrew C, Hosey RG, Gordon SM, Kinderknecht J, Kriss V, Landry G. Clin J Sport Med. 2008 Jul;18(4):309-15. Review. PMID: 18614881 [PubMed - indexed for MEDLINE] [Related citations](#)

- [Sports medicine pearls and pitfalls--defending the spleen: return to play after infectious mononucleosis.](#)
 2. Eichner ER. Curr Sports Med Rep. 2007 Apr;6(2):68-9. Review. No abstract available. PMID: 17376331 [PubMed - indexed for MEDLINE] [Related citations](#)

- [Upper respiratory tract infections: who plays, who sits?](#)
 3. Metz JP. Curr Sports Med Rep. 2003 Apr;2(2):84-90. Review. PMID: 12831664 [PubMed - indexed for MEDLINE] [Related citations](#)

I reviewed the first article because it represented a systematic review of the literature and came from a journal that I readily recognized. The following are the authors recommendations.

RETURN-TO-PLAY GUIDELINES

Return-to-play (RTP) decisions have traditionally focused on clinical resolution of symptoms and the absence of splenomegaly. Returning an athlete too quickly to sports participation risks splenic injury and the possibility of prolonging the time necessary for full recovery. Discerning clinical resolution additionally raises the issue of the requirement for advanced imaging and laboratory confirmation. To date, however, there are no well-designed large clinical trials to assist sports medicine providers in these difficult decisions.

The current consensus from the literature is that light, noncontact activities may commence 3 weeks from symptom onset. Research in the military has demonstrated no significant difference in aerobic capacity and no detrimental effects in those with IM allowed to participate in light exercise ad libitum as soon as they become afebrile, compared with those restricted from activity for 2 weeks. **The resumption of light activity assumes that the activity will avoid any chest or abdominal trauma and will not involve significant exertion or Valsalva activities and that the athlete is asymptomatic.** Progression of noncontact activity should then be gradually individualized as judged by the athlete's clinical progress.

Returning to contact activity is more controversial. The majority of splenic ruptures occur in the first 3 weeks of the illness; however, cases have been described up to 7 weeks. More caution is recommended in these situations.

There is no role for follow up with ultrasound as normal spleen size varies greatly and usually no baseline ultrasound is available.

3) Relevant Health Maintenance/Prevention Issues

Counseling about STDs

Summary of Recommendations from the US Preventive Services Task Force

- **The USPSTF recommends high-intensity behavioral counseling to prevent sexually transmitted infections (STIs) for all sexually active adolescents and for adults at increased risk for STIs.**
Grade: [B Recommendation](#).
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- **The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of behavioral counseling to prevent STIs in non-sexually-active adolescents and in adults not at increased risk for STIs.**
Grade: [I Statement](#).

Among the studies reviewed, successful high-intensity interventions were delivered through multiple sessions, most often in groups, with total durations from 3 to 9 hours. Little evidence suggests that single-session interventions or interventions lasting less than 30 minutes were effective in reducing STIs. Although 2 studies of moderate-intensity interventions did not demonstrate effect, a third study demonstrated that two 20-minute counseling sessions before and after HIV testing resulted in a clinically and statistically significant reduction in STIs. The USPSTF found no studies of abstinence-only counseling programs delivered in the clinical setting.

(reference: <http://www.uspreventiveservicestaskforce.org/uspstf08/sti/stirs.htm#clinical>)

In the absence of firm clinical evidence:

- **Allow adolescent time alone with clinician**
- **Normalize topic and explain patient doctor confidentiality**
- **Assess degree of knowledge about sexual health issues**
- **Assess risk by asking about personal behaviors and behaviors of friends**
- **Invite future conversations**