

Group A Strep

Non-Invasive

Invasive

This presentation is produced and presented by Carilion Clinic through the Virginia Long-Term Care Infrastructure Pilot Project (VLIPP)

Carilion VLIPP (2022-2024) is funded by the Virginia Department of Health to support long-term care facilities in Southwest Virginia with their infection prevention and control programs.

Disclaimer

- For educational purposes only
- No endorsement of products, software, or tools

Target Audience

Administration

Infection
Preventionist

Clinical Staff

Objectives

Understand the difference between non-invasive Group A Streptococcus and invasive Group A Streptococcus (iGAS)

Explain diagnosis and treatment for GAS infections

Recall populations at risk of iGAS infections

Describe ways to prevent and manage GAS & iGAS in care delivery

GAS: What is it?

- Group A Streptococcus (GAS)
 - Gram-positive cocci bacteria
 - Common organism: *Streptococcus pyogenes*
- Non-invasive GAS
 - Less severe, common infections
 - On the body/skin
 - Ex. Strep Throat
- Invasive GAS
 - Severe, aggressive conditions
 - Inside body
 - Ex. Necrotizing fasciitis

GAS: Why is it a BIG Deal?

Group A Strep can be naturally found in the nose and throat or on the skin

Although less contagious, asymptomatic people (Carriers) can spread the organism

Estimated 9,000-12,000 deaths annually from group A Strep

People with chronic health conditions like cancer, diabetes, heart or lung disease and those on medications like steroids are at higher risk of iGAS

People with open sores/wounds, aged 65 and older, history of alcohol abuse or injection drug use have higher risk of iGAS

From March 2022 to April 2023 a large GAS outbreak at a Virginia skilled nursing facility led to 30 resident cases and 12 staff cases. This resulted in 10 deaths among residents. GAS was found in throat and wound cultures. 16 Residents and 4 staff members were colonized/carriers

GAS: At Risk Populations

- Older Adults

- iGAS risk increases with age (2020):

- 8.3 cases per 100,000 population among people aged 50–64 years
 - 10.4 cases per 100,000 population among people aged 65–74 years
 - 11.2 cases per 100,000 population among people aged 75–84 years
 - 15.2 cases per 100,000 population among people aged 85+ years

- Estimated 14% of people aged 65+ years die from iGAS infections

- Long-Term Care Residents

- Age-matched adults in LTCFs are 1.5 times likely to die from GAS infections

iGAS: Transmission

Contact

- Infected wound
- Contaminated hands
- Direct contact of droplets on mucus membranes
 - Eyes, Nose, Mouth
- Contaminated surface

Ingestion

- Contaminated/improperly handled food

GAS: Incubation & Contagious Period

- Incubation
 - Symptoms usually develop 1-3 days after exposure to bacteria
- Contagious
 - Variable – dependent on infection
 - People with non-invasive GAS are less contagious after 12 hours of taking antibiotics AND fever free without taking fever reducing medication

GAS: What does it Cause?

Strep Throat

Scarlet Fever

Impetigo

Cellulitis

Acute Rheumatic
Fever

Post-Streptococcal
Glomerulonephritis

Nectrotizing
Fasciitis

Streptococcal Toxic
Shock Syndrome

GAS: Signs & Symptoms

GAS

- Sudden-onset of sore throat
- Pain upon swallowing
- Fever
- Headache
- Abdominal pain
- Nausea
- Vomiting
- Warmth
- Erythema
- Pain
- Fever
- Chills
- Malaise/Fatigue
- Papules & Lesions on face and extremities

iGAS

- Fever
- Chills
- Muscle Pain/Pain
- Nausea
- Vomiting
- Swelling
- Erythema
- Warmth
- Changes in skin color (red → purple → blue → black)

GAS: Diagnosis & Treatment



Practitioner

Consult facility's clinician to conduct physical examination



Testing

Rapid antigen detection test (RADT)
Cultures
Gram Staining
Blood Tests/Labs



Treatment

Antibiotics
Hospitalization
Surgery
Proper wound care
Managing underlying conditions
Prevent the spread to others

GAS Prevention & Management

Residents

- Education
 - Infection
 - Cough Etiquette/Respiratory Hygiene
 - Hand Hygiene
- Proper Isolation Precaution
- Masking residents when transporting through halls

GAS Prevention & Management

Staff

- Hand Hygiene
- Cough Etiquette/Respiratory Hygiene
- Stay home when sick
 - May return to work after 24 hours of taking antibiotics & fever free without taking fever reducing medication
- Surveillance & Monitoring
 - Line List
 - Call out log
- Early and accurate assessment of residents
- Timely & accurate reporting
- Appropriate PPE
- Disinfect equipment between uses

GAS Prevention & Management

Staff

- Use single use and single dose products if available
- Inspect & disinfect vendor equipment
- Wear mask when performing wound carePerform wound care in manner to reduce cross-contamination
- Administer antibiotics appropriately and for entire duration
- Education of staff, residents, and family
- Environmental Cleaning & Disinfection
- Audit

GAS Prevention & Management

Visitors/Vendors

- Screening
 - Signs/Symptoms
- Education
 - Couth Etiquette/Respiratory Hygiene
 - Hand Hygiene

Review Question

What are some ways we can prevent iGAS?

CDC Toolkit for iGAS

- Link: [CDC Toolkit for iGAS](https://www.cdc.gov/groupaStreptococcus/outbreaks/ICT/investigate.html)

Investigating 3+ cases (at least 1 invasive) of group A *Streptococcus* infection

Investigating 2 cases (at least 1 invasive) of group A *Streptococcus* infection

Investigating 1 case of invasive group A *Streptococcus* infection

Decision Tool for Investigating Group A *Streptococcus* Infections in Long-Term Care Facilities

For accessible version on line go to <https://www.cdc.gov/groupaStreptococcus/outbreaks/ICT/investigate.html>

Centers for Disease Control and Prevention
National Center for Immunization and Respiratory Diseases

Summary

Group A Streptococcal infections can be non-invasive (mild) or invasive (severe)

Older adults are at increased risk of iGAS infection

Prevention starts with hand hygiene but also includes:

- Placing residents on correct precautions
- Wearing proper PPE
- Masking residents
- Providing education to staff, residents, and family
- Auditing Compliance
- Surveillance

Commitment to prevention

- The spread of germs will not stop unless everyone is committed to prevention

References

- Abdelfattah, R. R., Bonnefond, C., Kiefer, C. A., Rehkopf, K., Spindle, H. E., Bair, P., Lineberger, S. (2023, November 27). Takeaways from Investigation of a Large Invasive Group A Streptococcus Outbreak in a Skilled Nursing Facility, Virginia, 2022-2023. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10678308/>
- CDC (2022, June 27) Cellulitis. Retrieved from: <https://www.cdc.gov/groupastrep/diseases-hcp/cellulitis.html>
- CDC (2022, June 27) Diseases Caused by Group A Strep. Retrieved from: <https://www.cdc.gov/groupastrep/diseases-public/index.html>
- CDC (2022, June 27) Impetigo. Retrieved from: <https://www.cdc.gov/groupastrep/diseases-hcp/impetigo.html>
- CDC (2022, June 27) Pharyngitis (Strep Throat). Retrieved from: <https://www.cdc.gov/groupastrep/diseases-hcp/strep-throat.html>
- CDC (2022, June 27) Post-Streptococcal Glomerulonephritis. Retrieved from: <https://www.cdc.gov/groupastrep/diseases-hcp/post-streptococcal.html>
- CDC (2022, June 27) Scarlet Fever. Retrieved from: <https://www.cdc.gov/groupastrep/diseases-hcp/scarlet-fever.html>
- CDC (2022, June 27) Streptococcal Toxic Shock Syndrome. Retrieved from: <https://www.cdc.gov/groupastrep/diseases-hcp/Streptococcal-Toxic-Shock-Syndrome.html>
- CDC (2022, June 27) Type II Necrotizing Fasciitis. Retrieved from: <https://www.cdc.gov/groupastrep/diseases-hcp/necrotizing-fasciitis.html>
- CDC (2023, March 3) Residents of long-term care facilities are at increased risk for disease and death from group A Streptococcus. Retrieved from: <https://www.cdc.gov/groupastrep/outbreaks/ltaf/risk.html>
- CDC (n.d.) Decision Tool for Investigating Group A Streptococcus Infections in Long-Term Care Facilities. Retrieved from: <https://www.cdc.gov/groupastrep/downloads/ltaf-decision-tool-508.pdf>
- Newberger, R., Gupta, V. (2023, February 6) Streptococcus Group A. Retrieved from: <https://www.ncbi.nlm.nih.gov/books/NBK559240/>
- VDH (2023, January) Streptococcal Disease (Group A). Retrieved from: <https://www.vdh.virginia.gov/epidemiology/epidemiology-fact-sheets/streptococcus-disease-group-a/>