Recognizing and Managing Adult Viral Infections

Adult viral illnesses are on the rise in a post-pandemic season. Cases of respiratory syncytial virus (RSV) and influenza have increased with the loosening of COVID mitigation strategies, resuming of social interactions, as well as reduced masking and social distancing. Thus, with the relaxation of these measures, there has been an increase in the number of viral infection cases.

Respiratory Syncytial Virus (RSV)

- Although mostly associated with infants and children, RSV can infect and sicken adults as well.
- Healthy adults infected with RSV have acute respiratory tract infection (RTI) symptoms, such as runny nose and cough.
- In adults over 50 years of age and those with comorbidities (such as immunocompromised host and advanced age), RSV is often an oversight when patients present with lower RTI symptoms.
- Mortality in hospitalized adults over 50 years of age is 6-8%.
- The traditional season for RSV in the United States usually occurs from October to April, with a peak in winter months. Off-season outbreaks may occur with the reduction of mask-wearing and physical distancing.
- The virus can survive on surfaces for several hours, making handwashing a critical measure to prevent transmission.
- Risk factors for severe illness include:
    - Cardiopulmonary disease
    - Immunocompromised status
    - History of persistent asthma
    - Residence of altitude greater than 2500 meters elevation
    - Institutionalized individuals
    - Older adults with chronic pulmonary disease or functional disability

Influenza

- Infection can occur with influenza A or Influenza B.
- The traditional season for influenza in the United States is during the winter months, although off-season outbreaks have occurred since COVID mitigation efforts have been relaxed.
- Older adults and immunocompromised patients may present with milder symptoms and may be afebrile.
- Symptoms may differ with various strains.
- Risk factors for severe illness include:
    - Unvaccinated status
    - Underlying pulmonary conditions
    - Underlying central nervous system (CNS) conditions
    - Extremes of age
    - Institutionalized individuals
    - Obesity
    - Immunocompromised status

Coronavirus Disease-2019 (COVID-19)

- Infection is caused by one of multiple variants of SARS-CoV-2.
- Although most areas currently do not have strict mitigation policies in place, the virus continues to circulate and mutate into new variants.
- Vaccines are continuously being upgraded to include as many variants as possible.
- Different variants have different symptoms and variable incubation periods.
- Risk factors for severe illness include:
    - Advanced age
    - Asthma and chronic lung disease
    - Cancer
    - Chronic kidney disease
    - Chronic liver disease
    - Diabetes
    - Disabilities
    - Human immunodeficiency virus (HIV)
    - Mental health disorders
    - Obesity
    - Pregnancy
    - Smoking
    - Immunosuppression

The following table summarizes information about each viral illness. There are many features that are similar among them, making diagnosis based on clinical presentation difficult.

Adult Viral Illnesses			
	RSV	**Influenza**	**COVID-19**
Transmission	Inoculation of mucous membranes, direct surface contact with droplets to mucous membranes	Inoculation of mucous membranes, direct surface contact with droplets to mucous membranes	Inoculation of mucous membranes, direct contact
Incubation	4-6 days	1-4 days	Varies depending on variant
Presentation	• Cough, rhinorrhea, conjunctivitis, sinusitis, otitis, tracheobronchitis, wheezing • Exacerbation of chronic pulmonary diseases • Acute respiratory failure in severe cases	• Abrupt onset of fever, nonproductive cough, body aches, malaise, nausea, congestion, sore throat, headache • Vomiting and diarrhea rare in adults	• Fever, chills, cough, fatigue, shortness of breath, headache, body aches, congestion, runny nose, loss of taste or smell, vomiting or diarrhea

Testing	Multipathogen PCR, rapid antigen testing, viral culture	Molecular assay, multipathogen PCR, antigen detection assay	Nucleic acid amplification testing (NAAT), antigen testing
Treatment	Symptom management: oxygen, bronchodilators, antipyretics	Supportive care: antipyretics, analgesics, hydration; antiviral treatment may be indicated	NIH Guideline for Treatment for Hospitalized Adults NIH Guideline for Treatment for Non-Hospitalized Adults
Prevention of Severe Illness	• Vaccination • Handwashing, masking, social distancing	• Vaccination • Handwashing, masking, social distancing	• Vaccination • Handwashing, masking, social distancing
Precautions	Airborne	Droplet	Airborne

Conclusion

With the relaxing of COVID restrictions, reduced mask wearing, and less social distancing, adult viral illnesses are more common than ever. During COVID, there were record low rates of these illnesses, but it is thought that lack of exposure to the viruses due to COVID mitigation may have led to an increase in cases after these measures were lifted and social interaction resumed. These viral illnesses are not an all-inclusive list, but currently are the most common being treated in hospitals (November 2022).

References:

Barr, F. & Graham, B. (2023, May 22). Respiratory syncytial virus infection: Clinical features and diagnosis. *UpToDate.* https://www.uptodate.com/contents/respiratory-syncytial-virus-infection-clinical-features-and-diagnosis

Bhimraj, A., Morgan, R. L., Shumaker, A. H., Lavergne, V., Baden, L., Cheng, V. C., Edwards, K. M., Gandhi, R., Muller, W. J., O'Horo, J. C., Shoham, S., Murad, M. H., Mustafa, R. A., Sultan, S., & Falck-Ytter, Y. (2020). Infectious Diseases Society of America Guidelines on the Treatment and Management of Patients with COVID-19. *Clinical infectious diseases: an official publication of the Infectious Diseases Society of America*, ciaa478. Advance online publication. https://doi.org/10.1093/cid/ciaa478

Centers for Disease Control and Prevention (CDC). (September 28, 2022). Overview of Testing for SARS-CoV-2, the virus that causes COVID-19. https://www.cdc.gov/coronavirus/2019-ncov/hcp/testing-overview.html#TestingInfection

Centers for Disease Control and Prevention (CDC). (March 16, 2022). Clinical Care Quick Reference for COVID-19. https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care-quick-reference.html

Centers for Disease Control and Prevention (CDC). (June 15, 2022). Underlying Medical Conditions Associated with Higher Risk for Severe COVID-19: Information for Healthcare Professionals. https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html

Centers for Disease Control and Prevention (CDC). (October 19, 2022). Covid-19: Information for Pediatric Healthcare Providers. https://www.cdc.gov/coronavirus/2019-ncov/hcp/pediatric-hcp.html#incubation-period-clinical-presentation

Dolin, M. (2023, September 6). Seasonal influenza in adults: Clinical manifestations and diagnosis. *UpToDate.* https://www.uptodate.com/contents/seasonal-influenza-in-adults-clinical-manifestations-and-diagnosis

Olsen, S. J., Winn, A. K., Budd, A. P., Prill, M. M., Steel, J., Midgley, C. M., Kniss, K., Burns, E., Rowe, T., Foust, A., Jasso, G., Merced-Morales, A., Davis, C. T., Jang, Y., Jones, J., Daly, P., Gubareva, L., Barnes, J., Kondor, R., Sessions, W., … Silk, B. J. (2021). Changes in Influenza and Other Respiratory Virus Activity During the COVID-19 Pandemic - United States, 2020-2021. *MMWR. Morbidity and mortality weekly report*, *70*(29), 1013–1019. https://doi.org/10.15585/mmwr.mm7029a1

Palmore, T. (2022, January 21). Infection control measures for prevention of seasonal influenza. *UpToDate*. https://www.uptodate.com/contents/infection-control-measures-for-prevention-of-seasonal-influenza

Zachary, K. (2023, April). Seasonal influenza in nonpregnant adults: Treatment. *UpToDate*. https://www.uptodate.com/contents/seasonal-influenza-in-nonpregnant-adults-treatment