

2019 Geriatric Pharmacy Specialty Recertification Literature Study: Module 1A-C

Learning Objectives

Module 1A: Immunizations in the Elderly

- Describe the limitations of aging and life-expectancy statistics according to Aspinall et al.
- Discuss the current issues surrounding vaccinations in the elderly.
- Explain the implications of changes in immunity in the elderly.
- Make a recommendation for increasing the rate(s) of vaccination in the elderly.
- Describe the rationale, methods, and limitations of the vaccine cost-effectiveness study conducted by Chit et al.
- Discuss the assumptions made in the Chit et al., study in regards to methodology.
- Compare and contrast the cost-effectiveness of the vaccines evaluated in the Chit et al., study.
- Make a recommendation for the type of influenza vaccine to be used in the elderly population based on the data from the Chit et al., study.
- Compare advantages and limitations of high dose seasonal influenza vaccine to other influenza vaccine products.
- Describe the rationale, methods, and limitations of the Zoster Efficacy Study in Adults 50 Years of Age or Older (ZOE-50).
- Discuss the risks involved with administration of a herpes zoster vaccination in individuals over the age of 50.
- Explain the implications of herpes zoster vaccine efficacy in adults 50 years of age or older.
- Compare and contrast the study groups in regards to those receiving the vaccine and those receiving placebo.
- Make a recommendation for herpes zoster vaccination in adults 50 years of age or older.
- Describe the rationale, methods, and limitations of the review on influenza vaccination effectiveness by Lang and colleagues.
- Discuss the factors that may interfere with the measurement of vaccine effectiveness.
- Explain the evidence of bias in estimates of influenza vaccine effectiveness.
- Identify next steps for vaccination in the elderly with immune exhaustion and explain herd immunity.
- Make a recommendation for a solution to the immunosenescence problem in the elderly.
- Describe the rationale, methods, and limitations of the study to estimate the effect of influenza vaccination on hospitalization and mortality in nursing home (NH) residents.
- Explain the challenges with and shortcomings of studying vaccination use and efficacy in the elderly.
- Discuss the prevalence and incidence of seasonal influenza in the elderly NH population.

- Compare and contrast the incidence of city-level influenza and pneumonia with mortality and hospitalization rates in the elderly.
- Make a recommendation for the type and timing of influenza vaccination in the elderly NH population.
- Describe the rationale, methods, and limitations of the prospective case-control design study in the elderly evaluating vaccine effectiveness of adjuvanted and unadjuvanted trivalent inactivated influenza vaccine (TIV).
- Discuss the risk factors associated with lack of vaccinating the elderly for influenza.
- Compare and contrast the effectiveness between adjuvanted trivalent inactivated influenza vaccine (ATIV) and TIV.
- Make a recommendation for the type and timing of ATIV and TIV in the elderly.

Module 1B: Iron Deficiency Anemia in Heart Failure

- Describe the rationale and methods of the Ferinject Assessment in Patients with Iron Deficiency and Chronic Heart Failure (FAIR-HF) trial.
- Identify the limitations of the FAIR-HF study.
- Compare and contrast the primary and secondary endpoints of the FAIR-HF study between the ferric carboxymaltose and placebo study groups.
- Explain the implications of the FAIR-HF study findings.
- Make a recommendation for the use of intravenous iron in a patient with chronic heart failure (HF) and iron deficiency (ID).
- Describe the results of major trials implementing iron supplementation in patients with heart failure (HF).
- Explain the pathophysiology of iron deficiency (ID) in HF.
- Discuss the challenges and methods of assessing ID in HF.
- Compare and contrast the iron preparations used for repletion in patients with ID.
- Discuss the risks to the patient if ID is not corrected in HF.
- Make a recommendation for managing ID in patients with HF.
- Describe the challenges involved with the management of iron deficiency (ID) in geriatric heart failure (HF) patients.
- Describe the rationale and methods of the iron repletion effects on oxygen uptake in heart failure (IRONOUT HF) study.
- Identify the limitations of the IRONOUT HF study.
- Explain the implications of the IRONOUT HF study findings.
- Make a recommendation for the use of iron repletion in a patient with HF with reduced ejection fraction and ID.
- Describe the importance of treating iron deficiency (ID) anemia in heart failure (HF).
- Discuss the rationale for the CONFIRM-HF study.
- Explain the CONFIRM-HF study patient inclusion and exclusion and why these parameters were chosen.
- Assess the endpoints of the CONFIRM-HF study and why they were chosen.
- Apply the results of the CONFIRM-HF study to current treatment guidelines.

- Describe the importance of understanding iron deficiency anemia in heart failure (HF).
- Discuss the clinical implications of the EFFECT-HF study.
- Explain the EFFECT-HF study design and patient selection.
- Identify the importance of iron supplementation in treating patients with HF.
- Apply the results of the EFFECT-HF study to current treatment pathways and protocols.

Module 1C: Osteoporosis

- Describe the rationale, methods, and limitations of the population-based cohort study on bisphosphonate drug holiday and fracture risk.
- Discuss the risk factors related to bisphosphonate persistent and non-persistent use.
- Compare and contrast the osteoporosis-related fractures between persistent and non-persistent bisphosphonate users and those who utilize drug holidays.
- Explain the implications of a bisphosphonate drug holiday concluded from the Adams et al. study.
- Make a recommendation for a drug holiday in women with long-term bisphosphonate use.
- Describe the challenges associated with diagnosing and treating osteoporosis in elderly men.
- Discuss the pathophysiology and causes of bone fragility in men.
- Compare and contrast the approved treatments for male osteoporosis.
- Explain the implications of the new and under development agents for male osteoporosis.
- Make a recommendation for the diagnosis and treatment of osteoporosis in a male patient.
- Describe the inclusion and exclusion criteria of the evidence review performed by the U.S. Preventive Services Task Force.
- Discuss the risks and benefits associated with preventive medication for osteoporosis.
- Explain the clinical considerations of vitamin D, calcium, or combined supplementation to prevent fractures.
- Apply the outcomes of studies on the effectiveness of vitamin D, calcium, or combined supplementation in fracture prevention.
- Make a recommendation for fracture prevention using vitamin D, calcium, or combined supplementation.
- Describe the shortcomings of and challenges associated with the treatment of osteoporosis.
- Discuss the risk factors associated with the medications used to treat osteoporosis.
- Compare and contrast the benefits of administering one osteoporosis medication over another.
- Explain the implications of long-term therapy with the drug therapies available for osteoporosis.
- Make a recommendation for the utilization of osteoporosis medication in an elderly patient.
- Describe the rationale, methods, and limitations of the randomized clinical trial on the effect of abaloparatide in postmenopausal women with osteoporosis.
- Discuss the prespecified exploratory outcomes of the Miller et al. study regarding abaloparatide versus placebo.
- Compare and contrast the adverse events associated with abaloparatide, placebo, and teriparatide.
- Explain the implications of the Miller et al. study results for treating osteoporosis patients.

- Make a recommendation for the use of abaloparatide and/or teriparatide in postmenopausal osteoporosis patients.