Assessment of Prescriber Knowledge and Understanding of Aspirin's Place in Therapy for the Primary Prevention of Atherosclerotic Cardiovascular Disease

Zachary Mayberry, PharmD. Candidate, Cassandra Maynard, PharmD

Background/Purpose

- Very small window for benefit for aspirin in primary prevention, despite established secondary benefit[1-3]
- Components of the 2022 USPSTF recommendations[4]:
  - Ages 40 to 59
  - 10-year ASCVD risk of ≥10%
  - Not at an increased risk for bleeding
  - Discontinue at age 75
- Studies find around 25% of aspirin use in primary prevention is inappropriate.[5]
- Only ~77% of patients take prophylactic aspirin at the recommendation of a physician.[6]
- Aspirin increases bleeding risk by 58%.[7]

Objectives

- Measure prescriber knowledge of proper use of aspirin for primary ASCVD prevention
- Compare knowledge to that of student pharmacists.
- Mitigate inappropriate use of aspirin

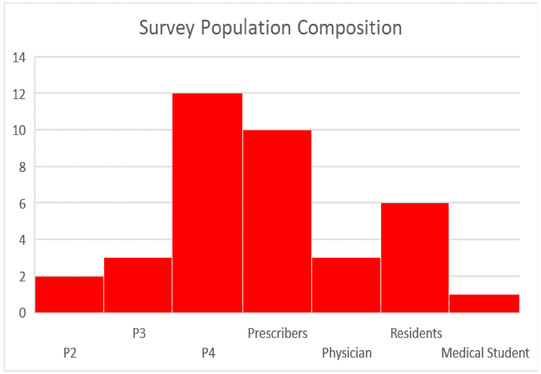
Methods

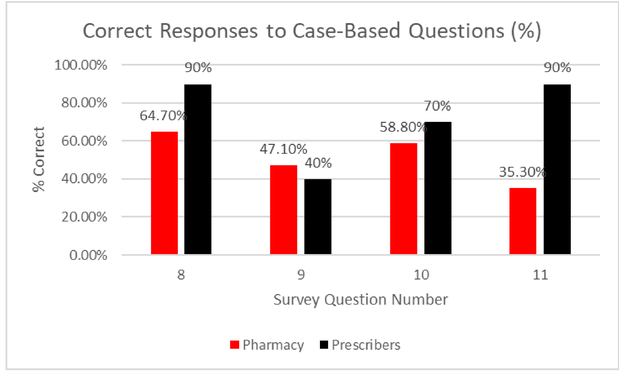
- Cross-sectional, survey-based study
- Study population came from SIUE School of Pharmacy and SMM Health St. Mary's
- Data collected February 9 – March 20, 2023
- Used the 2022 USPSTF guidelines to analyze knowledge
- Study population included: physicians, medical residents, medical students, and pharmacy students
- Excluded P1's and unfinished surveys
- 18 questions: paper and Qualtrics surveys
- Utilized several question types: case-based, quiz styled, and traditional survey-style

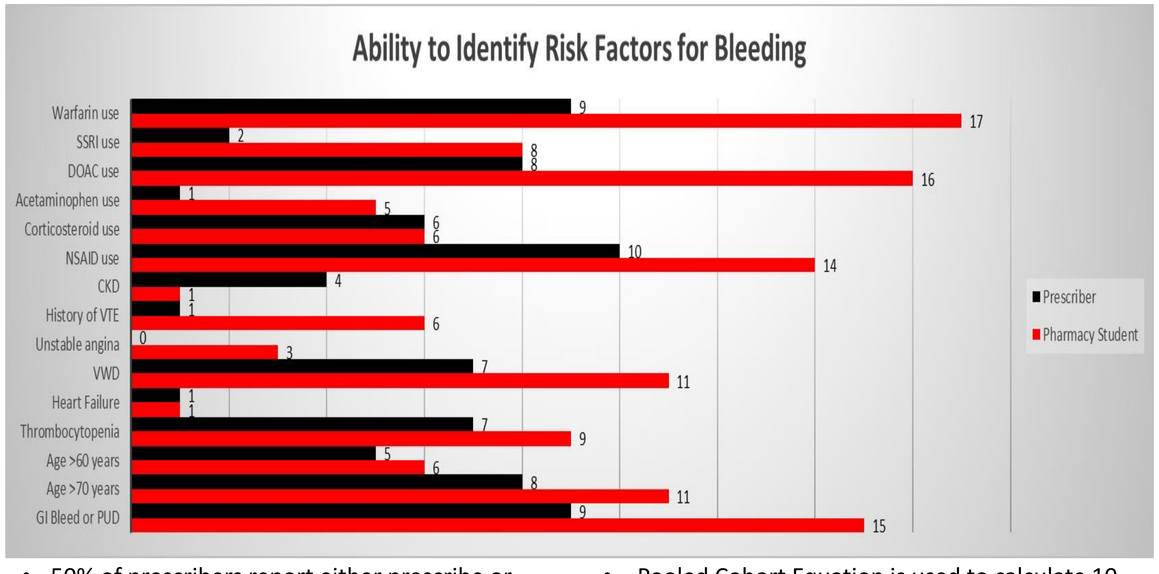
Results

- 200 surveys sent out to pharmacy students, 43 recorded responses, 17 complete
- 30 surveys distributed to prescribers, 16 recorded responses, 10 complete
- 4 prescribers and 4 student pharmacists claim to be familiar with the 2022 USPSTF recommendations.
- 35.3% of pharmacy students assessed aspirin correctly >50% of the time., whereas 50% of prescribers did the same.
- Only 2 (11.8%) pharmacy students and 1 (10%) prescriber knew the correct age when aspirin should be discontinued.

Results







- 50% of prescribers report either prescribe or consider prescribing aspirin for primary prevention
- If/when aspirin would be prescribed or recommended:
  - Risk factors for bleeding are considered
    - Always: 76.5% (student pharmacists), 80% prescribers
    - Most of the time: 23.5% (student pharmacists), 10% prescribers Rarely: 10% prescribers
  - Personal ASCVD risk factors are considered
    - Always: 82.4% (student pharmacists), 90% (prescribers)
    - Majority of the time: 17.6% (student pharmacist), 10% prescriber
- Pooled Cohort Equation is used to calculate 10-year risk
  - Always: 35.3% (student pharmacists), 70% (prescribers)
  - Majority: 29.4% (student pharmacist), 10% (prescriber)
  - Rarely: 10% (prescriber)
  - Never: 11.8% (student pharmacist)
  - Unfamiliar: 23.5% (student pharmacist), 10%(prescriber)
- Aspirin benefit varies based on 10-year ASCVD risk
  - Agree to some extent: 94%(student pharmacist), 90%(prescriber)
  - Neutral: 5.8% (student pharmacist), 10% (prescriber)

Strengths/Limitations

Strengths
- Use of case-based questions too assess knowledge of guidelines
- Evaluated prescribers with varied amounts of experience
- Used most-recent guidelines
- Multiple types of questions to assess knowledge

Limitations
- Low response rate and sample size
- Single location
- Didn't include all prescribers
- Potential for dishonest survey responses
- Did not include pharmacists

Conclusion

- Prescriber deficit in knowledge could contribute to inappropriate prescribing
- Education would have big benefit for both prescribers and student pharmacists
- Greater integration of topic into core therapeutics courses

References

- 1. Bowman L, Mafham M, Stevens W, et al. ASCEND: A Study of Cardiovascular Events iN Diabetes: Characteristics of a randomized trial of aspirin and of omega-3 fatty acid supplementation in 15,480 people with diabetes. Am Heart J. 2018;198:135-144. doi:10.1016/j.ahj.2017.12.006
- 2. Gaziano JM, Brotons C, Coppolecchia R, et al. Use of aspirin to reduce risk of initial vascular events in patients at moderate risk of cardiovascular disease (ARRIVE): a randomized, double-blind, placebo-controlled trial. Lancet. 2018;392(10152):1036-1046. doi:10.1016/S0140-6736(18)31924-X
- 3. Guirguis-Blake JM, Evans CV, Senger CA, O'Connor EA, Whitlock EP. Aspirin for the Primary Prevention of Cardiovascular Events: A Systematic Evidence Review for the U.S. Preventive Services Task Force. Ann Intern Med. 2016;164(12):804-813. doi:10.7326/M15-2113
- 4. US Preventive Services Task Force, Davidson KW, Barry MJ, et al. Aspirin Use to Prevent Cardiovascular Disease: US Preventive Services Task Force Recommendation Statement. JAMA. 2022;327(16):1577-1584. doi:10.1001/jama.2022.4983
- 5. Almagal N, Cainzos-Achirica M, McEvoy JW. Mind the Gap: Primary Prevention Aspirin and the Danger of Suboptimal Implementation of Contemporary Guidelines Into Clinical Practice. Circ Cardiovasc Qual Outcomes. 2022;15(3):e008799. doi:10.1161/CIRCOUTCOMES.121.008799
- 6. O'Brien CW, Juraschek SP, Wee CC. Prevalence of Aspirin Use for Primary Prevention of Cardiovascular Disease in the United States: Results From the 2017 National Health Interview Survey. Ann Intern Med. 2019;171(8):596-598. doi:10.7326/M19-0953
- 7. Zheng SL, Roddick AJ. Association of Aspirin Use for Primary Prevention With Cardiovascular Events and Bleeding Events: A Systematic Review and Meta-analysis [published correction appears in JAMA. 2019 Jun 11;321(22):2245]. JAMA. 2019;321(3):277-287. doi:10.1001/jama.2018.20578