The Relationship between Knowledge and Adherence to Inhaled Corticosteriods in African American Adolescents

RUSH UNIVERSITY

Contributors: Alana Finely, MS, RRT; Paula Jo Belice, MS; Giselle Mosnaim, MD

Introduction

Asthma prevalence, morbidity, and mortality rates are high for low-income urban African American adolescents.[1] Inadequate adherence to daily controller medications, specifically inhaled corticosteroids, may be a key factor leading to poor asthma outcomes in this population. It is important to study the role of potential reasons, including level of general asthma knowledge and knowledge of inhaled corticosteroids, which may be contributing to low adherence.

Methods

This study examined the relationship between both general asthma knowledge and knowledge of inhaled corticosteroids with adherence to prescribed daily inhaled steroids in a sample of urban African American adolescents with persistent asthma. Twelve urban African American adolescents between 16 and 20 years of age, low income diagnosed with persistent asthma, and prescribed a daily inhaled steroid medication, participated. The study's demographics Figure 1 shows the gender ratio, emergency room visits and the hospital admissions in the preceding twelve months and smoke exposure percentages of the total population. Subjects completed the ZAP Asthma Knowledge Instrument and the Inhaled Corticosteroid (ICS) Knowledge Questionnaire.[2] The ZAP is a 39-item questionnaire addressing asthma triggers, asthma self-efficacy, and general asthma knowledge in agree/ disagree format and four questions have a Likert-type of response.[3]The ICS measures knowledge of the function of ICS. It is comprised of 7 items with a 5 point response scale. [4] [5] Adherence was measured objectively using an electronic monitoring cap, the Doser CT (Medtrack Products, Easton, MA), placed on their daily inhaled steroid medication. .

Figures

Figure 1. Demographics

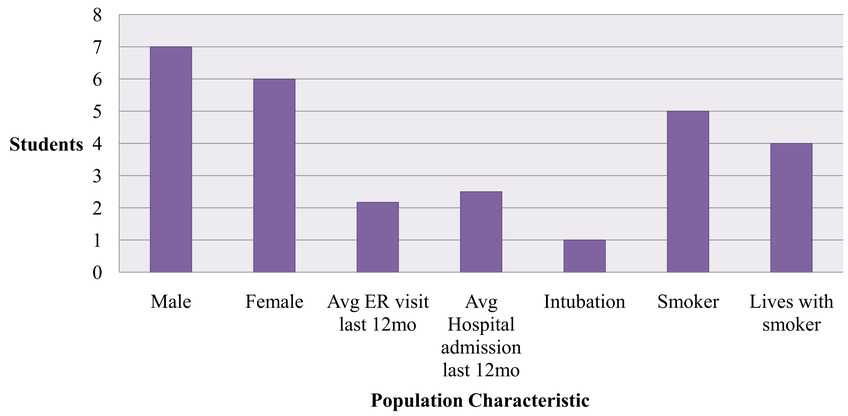
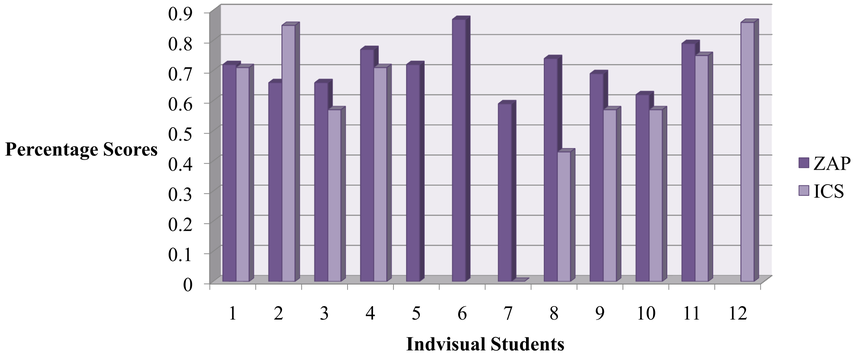


Figure 2. ZAP KNOWLEGE AND ICS QUESTIONARRIE COMPARSION



Data/Results:

On average, participants answered 71% of the items correctly on the ZAP Asthma Knowledge Instrument (range 59-87%, n=11) and 60% of the items correctly on the Inhaled Corticosteroid Knowledge Questionnaire (range 0-86%, n=9). Figure 2. Mean adherence to daily inhaled corticosteroids, measured over a 21 day period, was 19% (range 0-71%, n=9).

Conclusion

Overall, the results show that general asthma knowledge and knowledge of inhaled corticosteroids are much higher than adherence to daily inhaled corticosteroids. Perhaps knowledge may be necessary but not sufficient to promote adequate adherence. Given the small sample size and incomplete data, further investigation is warranted.

References

1 Adams PF, Hendershot GE, Marano MA, Centers for disease Control and Prevention/National Center for Health Statistics. Current estimates from the National Health Interview Survey, 1996. Vital Health Stat 10. 1999 Oct;(200):1-23

2 Mosnaim GS, Cohen MS, Rhoads CH, Rittner SS, Powell LH Int J Behav Med Use of MP3 players to increase asthma knowledge in inner-city African-American adolescents 2008 15(4):341-6.

3 ZAP Asthma Project. Caregiver asthma knowledge survey instrument. Form 9 [Revised 1997 Oct 3; cited 2007 Jun 8]. Atlanta, GA. Available from: http://www.sph.emory.edu/zapasthma/pdf/a9.pdf

4 Apter AJ, Reisine ST, Affleck G, Barrows E, ZuWallack RL. Adherence with twice-daily dosing of inhaled steroids. Socioeconomic and health-belief differences. Am J Respir Crit Care Med 1998 Jun;157(6 Pt 1):1810-7.

5 Mawhinney H, Spector S, Kinsman RA, Siegel SC, Rachelefsky GS, Katz RM, Rohr AS. Adherence in clinical trials of two nonbrochodilator antiasthma medications. Ass Allergy 1991;66:294-9.

Acknowledgements

The Department of Preventive Medicine, Rush University Medical Center.

RUSH Rush is a not-for-profit health care, education and research enterprise comprising Rush University Medical Center, Rush University, Rush Oak Park Hospital and Rush Health.