Oklahoma State University Medical Center

Monitoring among patients at risk for metabolic syndrome secondary to concomitant antiretroviral and second-generation antipsychotic therapy in an HIV patient population

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INTRODUCTION

- Many HIV therapies and second-generation antipsychotics (SGAs) are metabolized by overlapping enzymatic pathways.
- SGAs and protease inhibitors (PIs) have significant metabolic adverse effect profiles. These risks are compounded with concomitant therapy, both due to additive adverse effects and as a result of the CYP3A4-mediated interaction between the classes resulting in increased serum SGA concentrations.[1]
- Clinical data and monitoring recommendations for metabolic syndrome and drug interactions indicate that caution must be exercised with concomitant use of SGAs and PIs.
- Data on the prevalence of patients at risk for such drug interactions and evaluation of preventative strategies are limited.

OBJECTIVES

- The goal of this study was to explore the incidence of metabolic syndrome among patients on concurrent SGA and PI therapy compared to SGA use with other antiretroviral therapy (ART) and to evaluate current risk management practices at an HIV clinic.

METHODS

Study Design: Retrospective chart review of a randomized selection of 58 patients taking ART and SGAs

Inclusion Criteria:

- Patient at OSU Internal Medicine Specialty Clinic
- Concomitant SGA and HIV ART use for 6 consecutive months between August 31, 2015 to September 30, 2018

Exclusion Criteria:

- Change in class of ART during study period

Procedures:

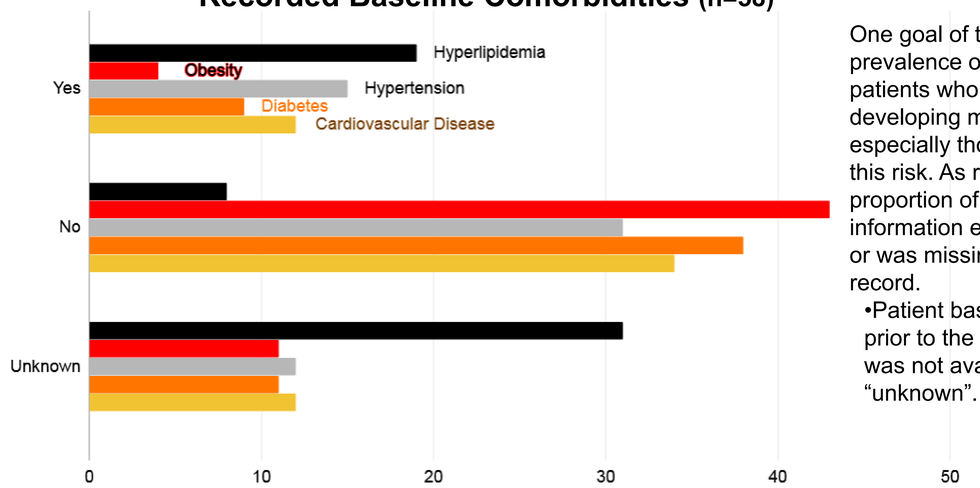
- Patient stratification categories included: (1) risk factors for metabolic syndrome, (2) ICD-10 metabolic syndrome diagnosis, (3) adherence to American Diabetes Association's (ADA) monitoring guidelines[2], and (4) medication adjustments.
- Variations in results between ART classes were evaluated.
- OSU Center for Health Sciences Institutional Review Board approved this study.

Statistical Tests:

- Descriptive statistics were conducted to assess abovementioned parameters.

RESULTS

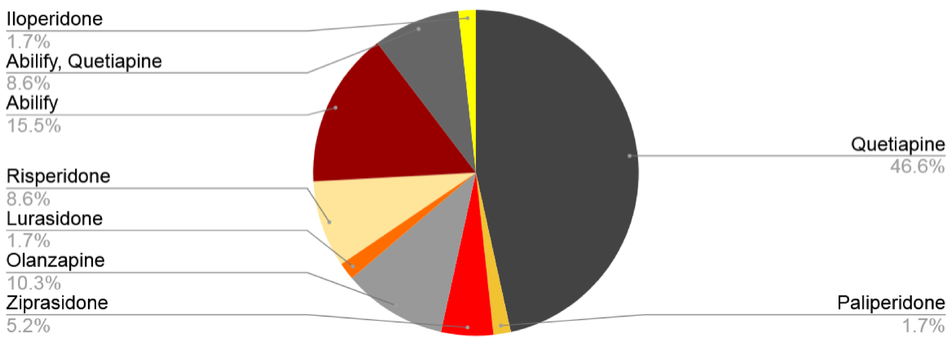
Recorded Baseline Comorbidities (n=58)



One goal of this study was to evaluate the prevalence of preexisting risk factors among patients who are at an increased risk of developing metabolic syndrome with SGA use, especially those on ART that may contribute to this risk. As reflected in the graph, a significant proportion of patients were lacking this information either because it was not recorded or was missing from the current electronic record.

- Patient baseline information that was recorded prior to the transition to the Epic EHR system was not available for review and was marked "unknown".

Second Generation Antipsychotics Prescribed (n=58)



A majority of patients were found to be taking SGAs, such as quetiapine and olanzapine, that pose the greatest risk of metabolic effects.

- Of those taking SGAs that have specific dose adjustment recommendations when given with PIs and cobicistat, only 3 out of 34 (8.8%) SGAs were dosed appropriately.
- One patient was receiving a contraindicated regimen of lurasidone and a protease inhibitor.

Percentage of Patients Monitored Per ADA Recommendations[2] for Patients Taking SGAs (n=58)

	Fasting Lipid Panel		Weight					Blood Pressure			Fasting Plasma Glucose		
Monitored	Baseline	12 Weeks	Baseline	4 Weeks	8 Weeks	12 Weeks	Every 3 Months	Baseline	12 Weeks	Annual	Baseline	12 Weeks	Annual
Yes	27.6	6.9	67.2	15.5	20.7	39.7	55.2	58.6	50	91.4	46.6	39.7	84.5
No	53.4	75.9	22.4	69	63.8	46.6	44.8	29.3	37.9	8.6	39.7	46.6	15.5
Unknown	19	17.2	10.3	15.5	15.5	13.8	0	12.1	12.1	0	13.8	13.8	0

No patients were monitored per ADA guidelines.

- Of the fifty-eight patients studied, twenty (34.5%) met criteria for metabolic syndrome and were in need of closer monitoring. Eight (13.8%) did not have adequate monitoring history to make a determination.
- The ADA also recommends monitoring waist circumference; however, this measurement is not taken at the clinic.

CONCLUSION

- This study highlighted the need for the development of a system to identify patients who need closer monitoring for and management of metabolic syndrome.
- Protease inhibitors are expected to carry the greatest risk of hyperlipidemia, diabetes, weight gain, and other adverse effects. These risks are compounded by concomitant SGA use. Of patients with metabolic syndrome, fifteen of thirty-four (44%) were taking protease inhibitors. Those who gained the most weight were taking a regimen that included a PI.
- None of the patients who met criteria for metabolic syndrome had a corresponding ICD-10 code listed.
- Most patients' psychiatric medications are managed by psychiatrists and coordinating care can be difficult. However, it may be possible to improve monitoring and communication with patients' psychiatrists when patients are at risk for metabolic disease states. Additionally, ART changes may be warranted to prevent potential long-term consequences of SGA and PI use.
- Another obstacle to improving monitoring is the lack of insurance coverage for more frequent laboratory testing.
- Until these barriers can be overcome, adequate treatment of comorbid conditions and lifestyle modification education will be especially important.

REFERENCES

1.Hill L, Lee KC. Pharmacotherapy considerations in patients with HIV and psychiatric disorders: Focus on antidepressants and antipsychotics. Ann Pharmacother. 2013;47(1):7589.

2.American Diabetes Association: Consensus development conference on antipsychotic drugs and obesity and diabetes (Consensus Statement). Diabetes Care 2004;27:596-601.

Disclosures

No authors of this presentation have anything to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.