Medication Assisted Treatment in Patients with Opioid Use Disorder and Heart Failure in the ACC of University Hospital

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Background

Both congestive heart failure (HF) and opioid use disorder (OUD) are prevalent problems in our society and specifically in the Ambulatory Care Clinic at University Hospital. Patients with OUD have a clear mortality benefit, both all-cause mortality and overdose related mortality, when they receive medication assisted treatment (MAT) with either methadone or suboxone [1]. It has been shown that patients with HIV and OUD who are on MAT have better overall outcomes with regards to their substance abuse as well as their viral loads [2,3]. No studies have been done on the benefits of MAT in patients who have both OUD and heart failure, however their outcomes would similarly be expected to improve due to better substance abuse control and closer follow-up. We aim to study the readmission rates, emergency department visits, and adherence to healthcare appointments in heart failure patients with opioid use disorder, focusing on the difference between those receiving MAT and those without medical assisted treatment.

Methods

Data was collected via retrospective chart review of University Hospital Ambulatory Care Center records from 01/01/2016 to 12/31/2018. Ninety-one patients who were diagnosed with both heart failure and opioid use disorder were included in this study. Patient data included age, sex and whether they had insurance coverage. The number of emergency department (ED) visits, number of hospital admissions and number of missed primary care or cardiology appointments was counted over this two-year period. We also documented whether patients were ever prescribed opioids, had a history of methadone or suboxone use, had any concurrent psychiatric conditions and the QTc of each patient. Welch or Mann-Whitney two sample t-tests were performed for continuous variables and chi-squared tests were performed for categorical variables in order to compare outcomes between the MAT versus no-MAT groups.

References

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2. https://pubmed.ncbi.nlm.nih.gov/14648464/
3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3210600/
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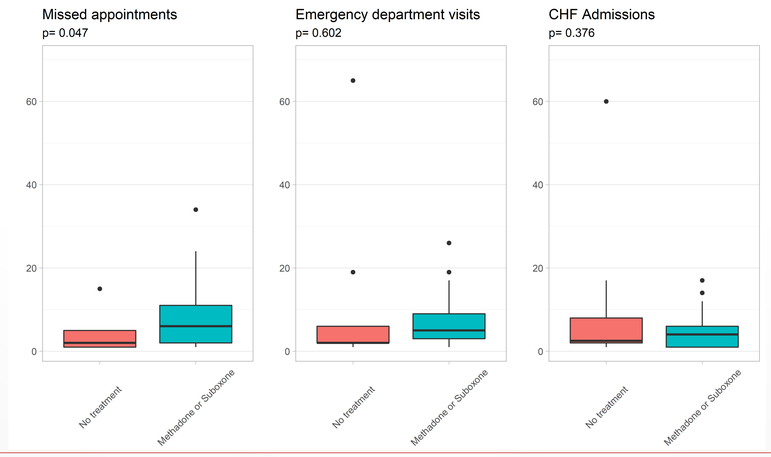
Results

Among 91 reviewed patients with opioid use disorder (60.4% male, mean age 58.6 ± 7.0 years), 37.4% had medical insurance, 18.7% psychiatric comorbidities, and 86.8% were treated with methadone or suboxone. In the treatment group 45 patients (57%) were treated with suboxone, and 60 patients (75.9%) with methadone. There were significantly more missed internal medicine and cardiology appointments in the methadone or suboxone group when compared to group of patients not on medication-assisted treatment (3.0 [IQR 1.0 – 9.0] vs 1.0 [0.0 – 5.00], p=0.047). There were no differences in rates of emergency department visits (p=0.602) and admissions for heart failure exacerbation (p=0.376) between the treated and no treated groups.

Table 1. Clinical characteristics of studied patients.

	Overall n=91	No treatment n=12	Treatment with Suboxone or Methadone n=79	P-value
Characteristics				
Age, years	58.6 (7.0)	60.0 (8.5)	58.4 (6.8)	0.481
Male sex	55 (60.4)	9 (75.0)	46 (58.2)	0.429
Medical insurance	34 (37.4)	5 (41.7)	29 (36.7)	0.992
Psychiatric comorbidities	17 (18.7)	1 (8.3)	16 (20.3)	0.555
Heroin use	89 (97.8)	11 (91.7)	78 (98.7)	0.618
Cocaine use	64 (70.3)	8 (66.7)	56 (70.9)	1
QTc interval, ms	460 (34)	474 (28)	457 (34)	0.122
Medication-assisted treatment				
Suboxone	45 (49.5)	0 (0.0)	45 (57.0)	0.001
Methadone	60 (65.9)	0 (0.0)	60 (75.9)	<0.001
Outcome				
Emergency department visits	4.00 [1.00 - 8.00]	2.00 [0.75 - 5.25]	4.00 [1.50 - 8.00]	0.602
CHF admissions	2.00 [0.00 - 5.00]	2.00 [0.00 - 3.50]	2.00 [0.00 - 5.00]	0.376
Missed appointments	3.00 [1.00 - 8.50]	1.00 [0.00 - 2.75]	3.00 [1.00 - 9.00]	**0.047**

Note: Values represent mean ± SD, median (IQR; 25th – 75th percentiles), or number (%).
Abbreviations: CHF = Congestive heart failure, QTc = corrected QT interval.



Conclusion

Opioid use disorder (OUD) and heart failure (HF) are medical issues that are ubiquitous in our patients at the Ambulatory Care Clinic of University Hospital. We investigated hospital readmission rates, emergency department visits and adherence to primary care and cardiology appointments in HF patients with OUD who were on MAT versus those not receiving MAT.

Our results suggest that MAT in patients with OUD and HF does not impact the rate of readmissions and ED visits, however a larger sample size is needed to increase the power of the study. In addition, we found that patients currently on MAT are more likely to miss their primary care and cardiology clinic appointments, which may occur as they are scheduled for more office visits. Frequent monitoring is usually necessary for patients currently on methadone or suboxone.

Additionally, suboxone may be considered safer in the cardiac population suffering from opioid use disorder compared to methadone, as it has less propensity for prolonging the QTc interval[5]. This was somewhat evidenced in our study, however, we had many patients who had been on both methadone and suboxone thus it was difficult to compare if there was an association between the MAT and the resultant QTc interval. Most patients were already on MAT, with the greater number being on methadone versus suboxone, which introduced a bias. This bias may not be present in other locations where methadone clinics may not be as readily available as in Newark, NJ.

In an effort to increase patient adherence to medication and overall healthcare (which would hopefully decrease emergency department visits, hospital readmission rates and missed appointments), it would be convenient to have treatment for both opioid use disorder and heart failure in one clinic - as can be done in the Ambulatory Care Clinic with MAT prescriptions alongside appropriate medical follow-up.

Future Directions

Increase the sample size, especially of patients not on MAT to increase statistical significance.

*Authors contributed equally to this study.