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U.S. Department
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Macrolides vs. Fluoroquinolones for Retreatment of COPD Exacerbations

Ashleigh Wallace-Lacey, PharmD
PGY1 Pharmacy Practice Resident
VA St. Louis Health Care System
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Residency Program Director: Jonathan McMahan, PharmD, BCPS
Project Supervisor: Travis Linneman, PharmD, BCPS



DISCLAIMER

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BACKGROUND

- Acute exacerbations of COPD (AECOPD) lead to increased morbidity and mortality with increased burden on the healthcare system
- Initial treatment failure of antibiotics is common
- Limited data available to guide antibiotic therapy choice after initial treatment failure

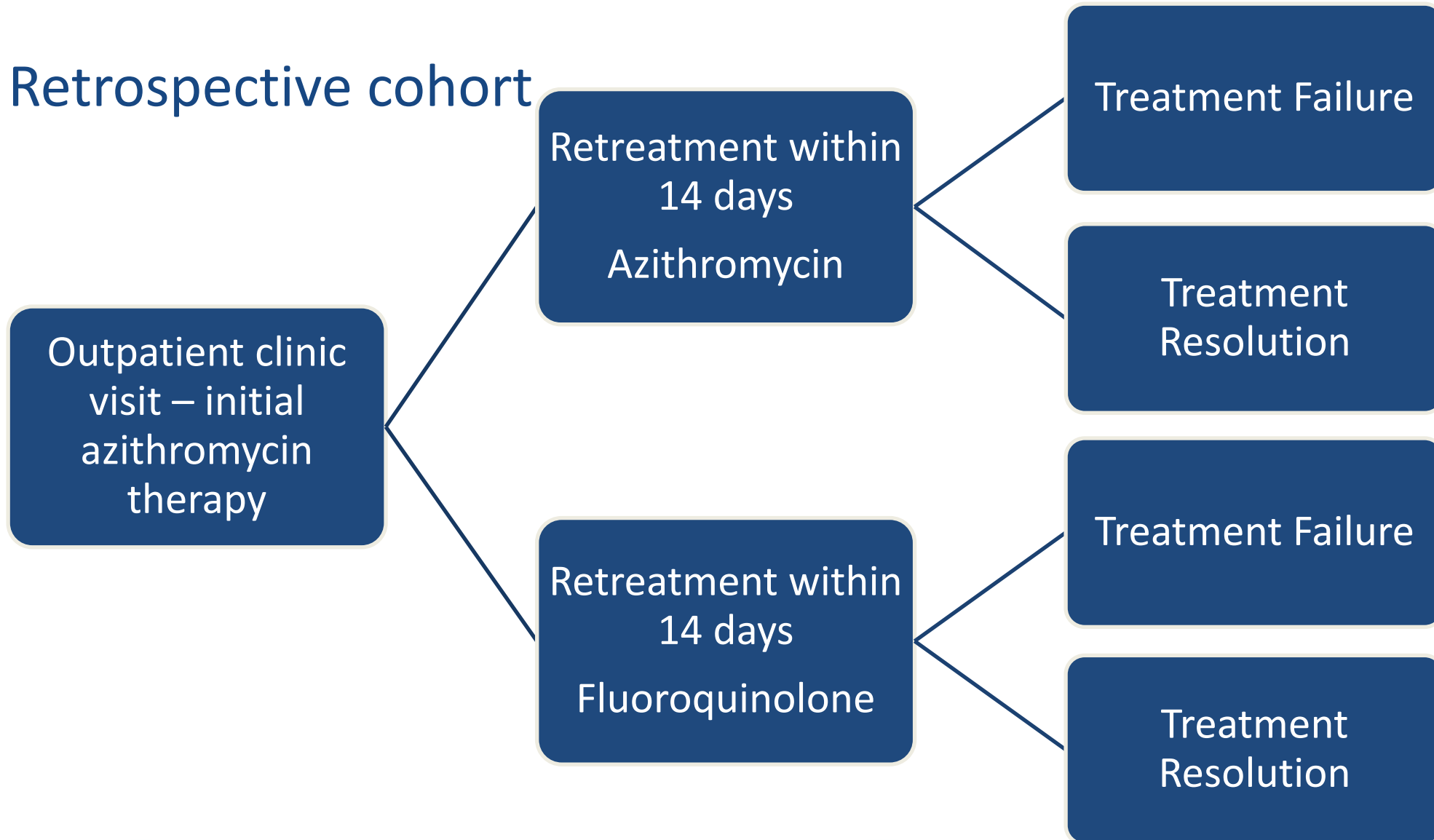


OBJECTIVE

To evaluate efficacy of macrolides and fluoroquinolones in the outpatient treatment of acute COPD exacerbations after initial macrolide treatment failure



- Retrospective cohort





Inclusion

- 18-89 years old
- On guideline-directed therapy for COPD for 180 days
- Macrolide antibiotic for COPD exacerbation within 14 days
- Fluoroquinolone or macrolide treatment at index COPD-related visit

Exclusion

- Oral steroids for COPD exacerbation within 1 year prior
- Concomitant asthma
- COPD exacerbation within prior 180 days



PRIMARY OUTCOME

Failure of COPD exacerbation resolution, as defined by the composite of:

- unscheduled outpatient COPD visit,
- COPD-related ER visit, or
- hospital admission for COPD within 30 days of index COPD related visit



SECONDARY OUTCOMES

- Individual components of primary outcome
- Number of exacerbations 90, 180, 365 days after
- Albuterol use within 180 days prior
- Albuterol use within 365 days after



- **Methods**
 - Primary outcome: Chi-Squared (Fischer's exact)
 - Secondary outcomes: Chi-Squared (Fischer's exact)
- **Power = 80%**
- **Alpha = 0.05**
- **Sample size = 82 patients per group**
 - Based on expected 35% failure rate in macrolide group and 15% failure rate in fluoroquinolone



BASELINE CHARACTERISTICS

Characteristic	Macrolide group (n=1)	Fluoroquinolone group (n=2)
Age		
<65	1	1
≥65	0	1
Gender – male	1	2
Race – white	1	2
Smoking status		
Yes	0	1
Never	0	0
Former	1	1
Maintenance treatment		
Albuterol	1	1
LAMA +/- LABA	1	1
ICS	0	1
Oxygen treatment	1	0
Albuterol use before visit		
<2	0	1
≥2	1	1
Concomitant Afib	0	1



RESULTS

Outcomes	Macrolide Group (n=1)	Fluoroquinolone Group (n=2)	P-Value
Primary outcome	1	1	0.67
Secondary outcomes			
Unscheduled outpatient visit	1	1	0.67
Albuterol use after visit			0.67
<4	1	1	
≥4	0	1	



CONCLUSIONS

- Unable to detect a difference between groups due to small sample size
- Only 2 of 3 subjects experienced primary outcome
- Not generalizable to general population



LIMITATIONS/DISCUSSION

- Limited patients identified for inclusion
- Stringent inclusion/exclusion
 - Patient identified initially from prescription data
 - Many AECOPD captured by phone visits
 - Inhaled corticosteroid therapy common
- Potential physician documentation inconsistencies
 - i.e. acute bronchitis diagnosis
- Community care
- Timeframe between treatments may be too short
- Data pulled from single center



NEXT STEPS

Lengthen timeframe between initial azithromycin treatment and second treatment to 30 days

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