

Online Supplement

Iron Deficiency and All-Cause Hospitalization Risk in a Clinical Cohort of COPD

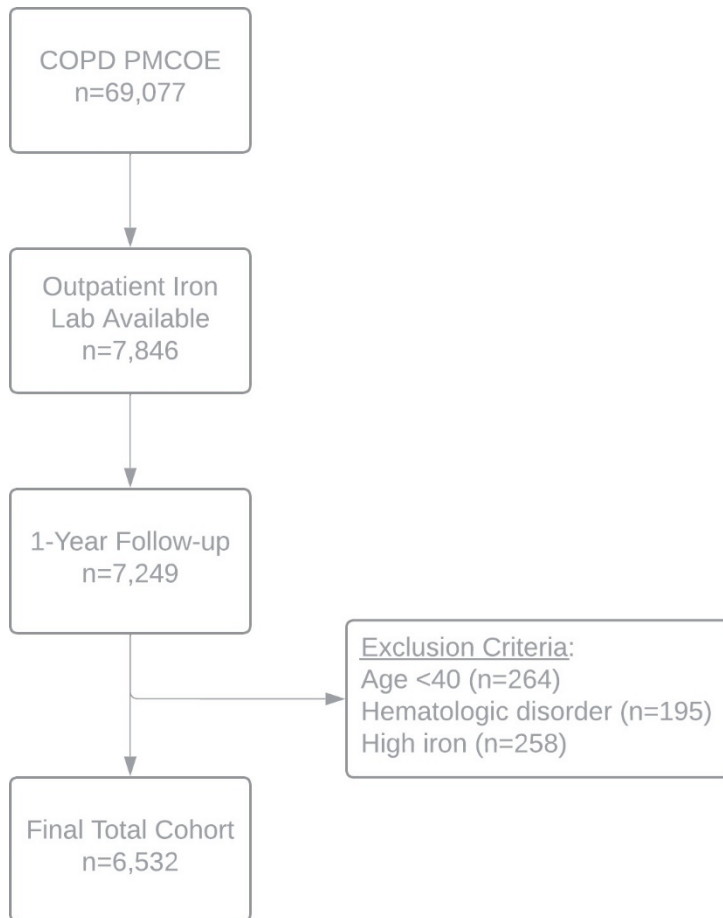
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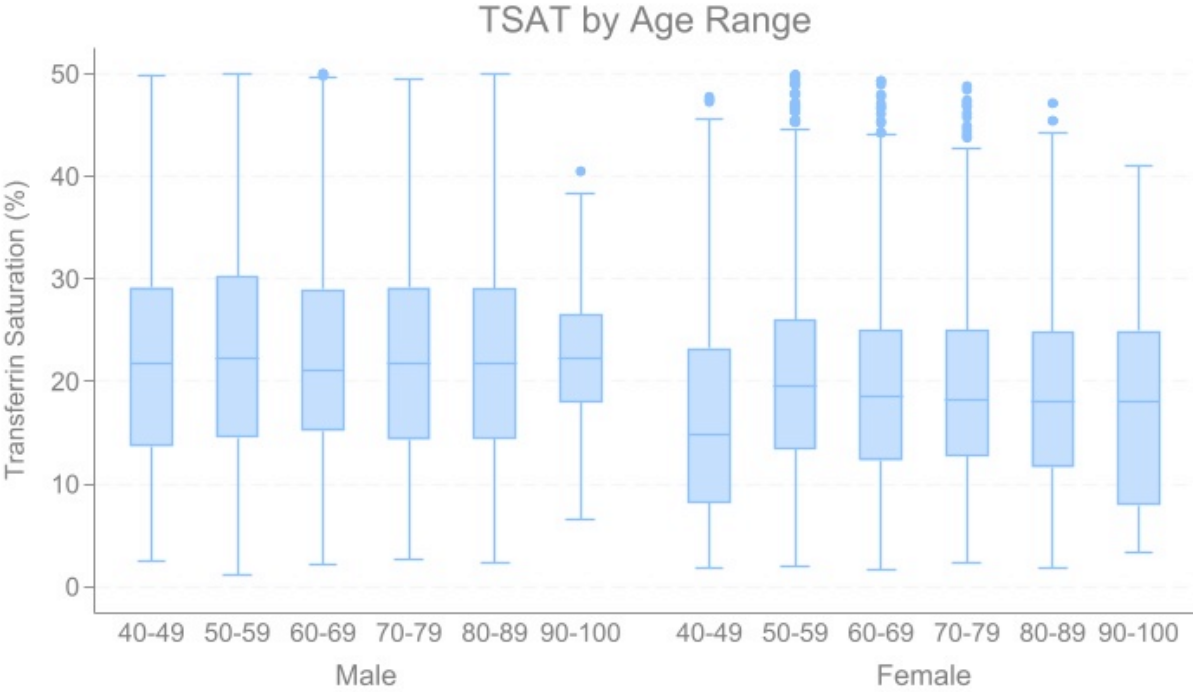
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Supplemental Figure 1. Flow Diagram for study cohort



Supplemental Figure 2. Mean TSAT for each decade of life, by sex



Supplemental Table 1. Patient characteristics among iron deficient, comparing non-anemic versus anemic by sex

Characteristic	Female		p-value	Male		p-value
	Non-anemic	Anemic		Non-anemic	Anemic	
n (% among gender)	644 (29%)	1566 (71%)		275 (23%)	900 (77%)	
Age	61.9 (11)	64.8 (13)	<0.01	63.0 (11)	67.1 (11)	<0.01
Race			<0.01			0.014
White, N (%)	385 (60%)	776 (50%)		184 (67%)	504 (56%)	
Black, N (%)	231 (36%)	720 (46%)		81 (29%)	353 (39%)	
Asian/Other, N (%)	28 (4%)	70 (4%)		10 (4%)	43 (5%)	
Smoking history, N (% Ever)	505 (79%)	1188 (76%)	0.28	241 (88%)	792 (89%)	0.7
BMI	31.9 (8.5)	31.9 (9.3)	0.99	29.3 (7.0)	28.9 (7.5)	0.44
FEV ₁ % Predicted	71.9 (21.6)	66.3 (21.3)	<0.01	71.1 (23.6)	65.1 (22.6)	0.01
Hospitalization History						
COPD exacerbation, N (% yes)	6 (0.9%)	20 (1.3%)	0.49	2 (0.7%)	11 (1.2%)	0.49
All-cause, N (% yes)	259 (40%)	798 (51%)	<0.01	100 (36%)	472 (52%)	<0.01
Comorbidities						
Heart Failure, N (% Yes)	105 (16%)	338 (22%)	0.005	64 (23%)	299 (33%)	0.002
Chronic Kidney Disease, N (%)	217 (34%)	768 (49%)	<0.01	113 (41%)	521 (58%)	<0.01
eGFR	76.6 (23.4)	67.8 (26.2)	0.001	80.2 (23.2)	67.3 (26.9)	<0.01
Diabetes, N (% Yes)	330 (51%)	895 (57%)	0.01	137 (50%)	513 (57%)	0.04
Hemoglobin A1c	6.3 (1.3)	6.4 (1.5)	0.1	6.4 (1.4)	6.3 (1.4)	0.47
Liver disease, N(% Yes)	192 (29.8%)	429 (27.4%)	0.25	92 (33.5%)	352 (39.1)	0.09
Iron Parameters						
TSAT	15.0 (3.7)	11.2 (4.9)	<0.01	15.6 (3.4)	12.2 (4.8)	<0.01
Ferritin (median, IQR)	54 (28,97)	34 (14,95)		70 (39,157)	62 (21,162)	
Medication Use						
IV iron use, N (% Yes)*	8 (1.2%)	47 (3.0%)	0.02	2 (0.7%)	35 (3.9%)	<0.01
Oral iron use, N (% Yes)*	63 (9.8%)	437 (28%)	<0.01	39 (14%)	253 (28%)	<0.01
Aspirin, N (% Yes)**	457 (71%)	1,162 (74%)	0.12	214 (78%)	753 (84%)	0.03
Antiplatelet, N (% Yes)**	124 (19%)	403 (26%)	0.001	88 (32%)	273 (30%)	0.6
Oral Anticoagulation, N (% Yes)**	161 (25%)	477 (31%)	0.01	79 (29%)	332 (37%)	0.013

*after iron lab, during follow-up period

**Ever use

Supplemental Table 2. Sensitivity analyses among individuals with airway obstruction on spirometry

	Females	Males
n	751	671
TSAT		
OR*	1.03	1.1
95% CI	0.80-1.26	0.79-1.48
p-value	0.84	0.48
Anemia		
OR	1.42	1.43
95% CI	0.67-3.0	0.58-3.53
p-value	0.36	0.44
Interaction		
p-value	0.84	0.73

Covariates: age, race, BMI, CHF, eGFR, % predicted FEV1, history COPD hospitalization in prior year

Interaction term: anemia status

*Odds ratio of 1-year all-cause hospitalization per 10% decrease in TSAT

Supplemental Table 3. Estimated probability of all-cause hospitalization at one year by iron deficiency category

	Females		Males	
N	3,858		2,644	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Iron Deficient				
OR*	1.25	1.21	1.15	1.1
95% CI	1.01-1.55	0.98-1.5	0.86-1.55	0.82-1.5
p-value	0.037	0.078	0.33	0.49
Anemia				
OR	1.87	1.69	1.53	1.36
95% CI	1.53-2.29	1.37-2.1	1.24-1.89	1.09-1.7
p-value	<0.01	<0.01	<0.01	<0.01
Interaction				
p-value	0.07	0.15	0.38	0.21

Adjusted by: age, race, BMI, CHF, eGFR, history COPD hospitalization in prior year; Interaction: anemia