

## Relationship between self-reported adherence, medication collections and clinical variation in cystic fibrosis

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**Objectives:** In 2007 an electronic clinical record (ECR) was implemented within a Regional Adult CF unit (420 patients) coding for all variables of CF, captured at each contact. Longitudinal patterns of clinical variation have emerged that suggest a relationship between variation in lung function between treatments and overall adherence. Our aim was to 1) determine the accuracy of self-report adherence 2) explore the relationship between clinical variation and adherence.

**Methods:** Patients completed a self-report of adherence (CFQ-R) and consented to pharmacy script data collection (previous 6 months). Coefficient of variation for FEV<sub>1</sub> was calculated from all clinical contacts within the previous year. Age, gender, microbial status, disease severity, medication, lung function and anthropometric measures were collected.

**Results:** 250 patients [age 29.7(±9.2) years, 58.6% (M), baseline BMI 22.5 kg/m<sup>2</sup> (±3.8), FEV<sub>1</sub> 61.3% (±25.1), FVC 79.4% (±23.1)] completed the study

Selected variables of adherence	Correlations with self-report adherence						Descriptive stats		
	Adherence Self-Report (using CFQ-R) (%)	Pharmacy collection	Sig	FEV <sub>1</sub> Coeff Variation	Sig	CRP coeff variation	Sig	Pharmacy discrepancy (%)	Sig
Total adherence	77.7(±17.5)	0.61	p<0.001	-0.16	P<0.001	0.05	p=0.20	14.3	p<0.001
Aerosol to thin mucus	73.0(±37.8)	0.51	p<0.001	-0.11	p=0.06	0.15	p=0.02	19.2	p<0.001
Aerosol to open airway	82.3(±31.9)	0.34	P<0.005	0.001	p=0.47	0.16	p=0.025	4.5	p=0.24
Inhaler	77.4(±35.4)	0.51	p<0.001	-0.07	p=0.21	0.12	p=0.07	16.2	p<0.001
PERT	91.4(±21.3)	0.45	p<0.001	-0.21	P=0.001	-0.12	p=0.04	23.6	p<0.001
Vitamins	88.2(±27.2)	0.46	p<0.001	-0.03	P=0.35	0.15	p=0.01	24.7	p<0.001
Oral nutrition supplements	64.1(±39.8)	0.51	p<0.001	-0.20	P=0.01	-0.06	p=0.28	18.1	p<0.001
Oral antibiotics	86.4(±26.6)	0.32	p<0.001	-0.15	P=0.01	-0.08	p=0.11	19.5	p<0.001
Nebulised antibiotics	67.4(±9.1)	0.55	p<0.001	-0.19	P=0.01	-0.04	p=0.31	2.1	P=0.43

**Conclusion:** Self-report consistently exceeds medication collection. Longitudinal indices of lung function inversely relate to reported adherence, enabling investigation of FEV<sub>1</sub> coefficient variation as a predictor of adherence in CF