

ANNUAL MEDICATION REVIEW BY A CLINICAL PHARMACIST IN AN ADULT CYSTIC FIBROSIS CENTER

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Objectives

The complexity of cystic fibrosis (CF) **drug regimens** is a major challenge for patients and CF specialists. A **multidisciplinary approach** is thus essential and a clinical pharmacist can help optimize medication [1]. 2011's CF UK Trust suggests that patients should be seen annually by a pharmacist [2].

Aim of the project: to implement a pharmacy consultation during the annual review, and to analyze the pharmaceutical interventions.

Methods

A **one-hour interview** with a clinical pharmacist and CF patients was included in their annual review (→Fig.1). Pharmacists reviewed medication with patients using a form assessing the drug list, administration and storage items (→Fig.2). Drug interactions were systematically checked. A feedback was then given to CF physicians.

Number and types of the following parameters were recorded: (a) patient's questions, (b) pharmacist's interventions to patient, and (c) pharmacist's interventions to physician.

Results

From December 2013 to May 2016, 2 pharmacists conducted 31 interviews for 26 patients (14 women, 12 men).

- Mean age of the CF patients: **32 (± 10) years** (range: 19-49)
- Medication lists contained a mean of **15.2 (± 6.4) drugs** (range: 6-27), of which 76% were chronic and 24% were 'as needed' (example →Fig. 3).

Per interview,

- patients had **1.9 (± 1.6) questions**,
- pharmacists addressed **2.0 (± 1.3) interventions** to patients, and **1.7 (± 1.2)** to physicians.

The most frequent types of questions/interventions concerned **administration issues** (15%), **adverse events** (12%), **dose timing** (11%), **drug stability and storage** (11%), **drug adherence** (9%) and **drug interactions** (9%) (→Fig. 4).

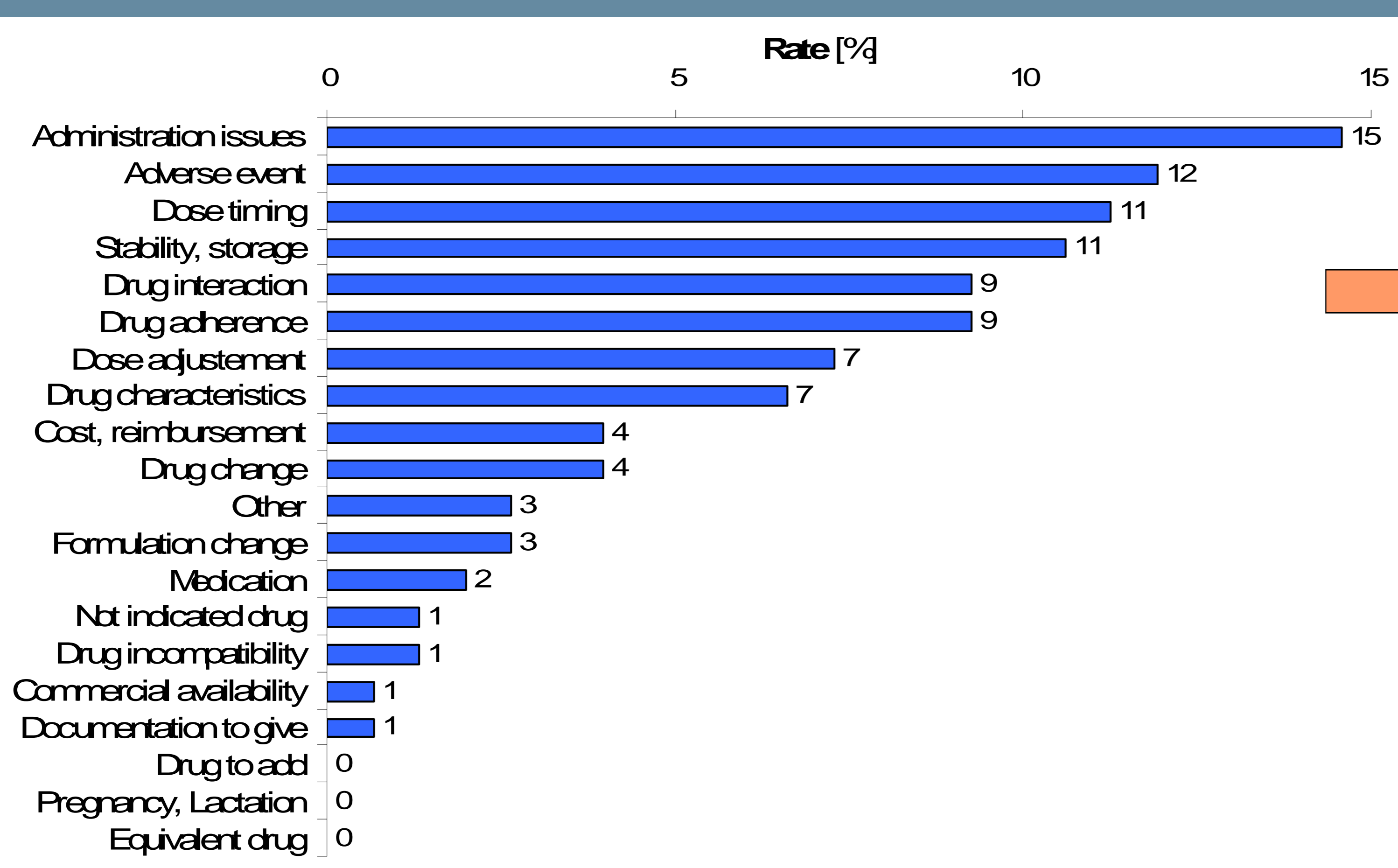


Figure 4: Distribution (%) of types of questions and interventions

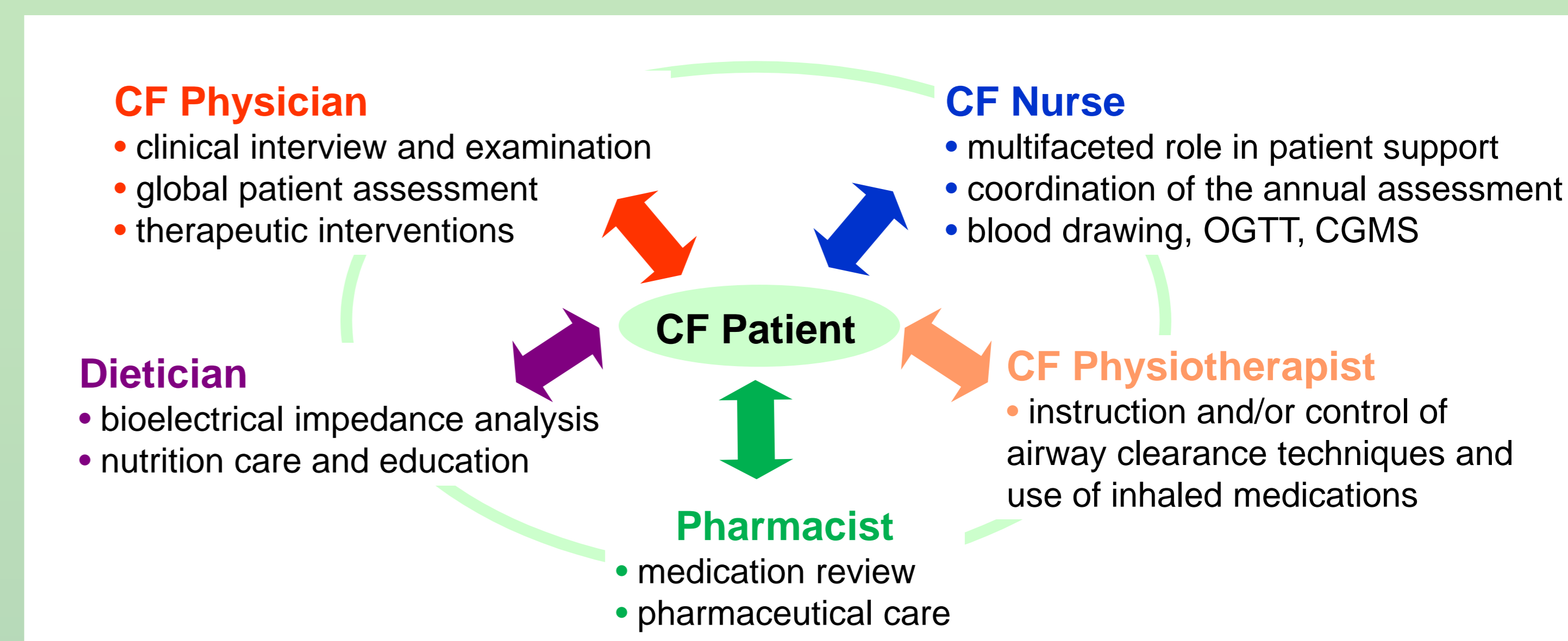


Figure 1: Actors of the annual review for CF patient (abbrev.: OGTT, oral glucose tolerance test; CGMS, continuous glucose monitoring system)

Figure 2: Form used for the annual medication review by the pharmacist

Médicament	Dosage	Posologie	Réserve
Créon cps	40'000 UI	2 3 3	
Créon cps	25'000 UI		X
Calcimagon D3 cpr		Stoppé	
AquaDEKs cps		2 0 0	
-vit A	18'167 UI		
-vit D3	1'200 UI		
-vit E	150 UI		
-vit K	700 mcg		
Maltofer cpr		1x/j	
Oméprazole cps	20 mg	1 0 0	
Ursofalk cps	250 mg	2 0 1	
Zithromax cpr	250 mg	2 0 0	3x/sem
Fluimucil cpr	600 mg	1 0 0	

Médicament	Dosage	Posologie	Réserve
Singular cpr	10 mg	0 0 2	
Symbicort Turbuhaler	400/12 mcg	1 0 1	
Spiriva cps	18 mcg	1 0 0	
Ventolin diskus	200 mcg	2 (1) 2	X
Pulmozyme aé.	2.5 mg	1 0 1	
Cayston aé.	75 mg	1 1 1	1 mois/2 pause
Bramitob aé.	300 mg	1 0 1	sera stoppé
Colifin aé.	1 mio UI		remplacera Bramitob
Panadol cpr			X
Algifor cpr			X
Xyzaal cpr	5 mg		X

Figure 3: Example of a CF patient's drugs list

Examples of questions / interventions:

- A patient asked for the safest way to know if his rescue salbutamol's metered-dose inhaler was still usable or empty.
- A patient requested the comparison between the nephrotoxicity of 2 formulations of tacrolimus.
- Due to the potentially forgotten pancreatic enzymes at noon, the last delay to take them was discussed.
- Recommendations for drug storage during traveling were given to patient.
- Pharmacist warned physicians about QT prolongation risk due to 3 associated drugs.

Discussion

Pharmacy consultation permitted to address several issues of drug safety and use with CF patients, and to share relevant information with the CF team in order to optimize treatment. The numerous drugs taken by CF patients also represent an opportunity for clinical pharmacists to motivate them regarding adherence. The satisfaction of the CF participants and the impact of pharmacist's interventions on clinical outcomes remain to be evaluated.