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Abstract

TITLE: IMPROVING NEBULISER ADHERENCE IN AN ADULT CF CENTRE - DIFFERENCES IN UNADJUSTED ADHERENCE VS NORMATIVE ADHERENCE
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ABSTRACT BODY:

Abstract Body: Background
Interventions to support preventative inhaled therapy adherence are important for effective self-management. Treatment rationalisation can reduce burden and potentially improve adherence but may lead to suboptimal treatment regime. Defining a minimum treatment regime[1] given a person's characteristics (normative regime) provides a helpful metric to understand adherence rate over time and may well differ from measures of unadjusted adherence that provide less precision in estimating quality of care.

Aim
To explore the impact of different adherence definitions (unadjusted vs normative) as adherence changed in an adult CF centre between 2013 & 2014

Methods
This is a retrospective analysis of the objective nebuliser adherence data measured with chipped I-neb nebulisers for 2013 & 2014 in the Sheffield Adult CF Centre. People just on non-chipped devices for inhaled therapy, on ivacaftor or with previous lung transplantation were excluded.
Unadjusted adherence was calculated as a percentage of the agreed regimen between clinicians and people with CF. Normative adherence, which takes into account a person's characteristics when defining the minimum required treatment regime, was calculated with previously described methods.[1] For example, the denominator for a person with chronic pseudomonas (requires mucolytic & antibiotic) who only agreed to use nebulised dornase alfa once daily is 1 neb/day in the calculation of % agreed adherence; but the denominator is 3 neb/day in the calculation of % normative adherence.[1]

Results
89/166 (50.3%) adults were on I-neb in 2013, which increased to 97/170 (54.8%) in 2014. There was general improvement across all adherence metrics.
79 adults were on I-neb for both years. Among this cohort, 7 had regime rationalisation while 10 had regime augmentation. Those with regime rationalisation have lower normative adherence in 2013 compared to those with regime augmentation (median 20.7%, IQR 15.8-56.1% vs median 42.8%, IQR 4.4-86.5%). Regime rationalisation was associated with improved unadjusted adherence (median change 7.1%, IQR -11.0% to 10.0%), but there was reduction in both normative adherence (median change -0.8%, IQR -10.2% to 2.5%) and total nebuliser used per week (median change -0.2, IQR -3.3 to 1.2). Regime augmentation had the opposite effect (median change in unadjusted adherence -5.0%, IQR -15.2% to 20.5%; median change in normative adherence 5.9%, IQR -3.3% to 27.6%; median change in total nebuliser used per week 1.6, IQR -0.6 to 3.8).

Conclusions

There was a genuine improvement in the use of preventative nebuliser among adults with CF in Sheffield between 2013 and 2014. It is however crucial to consider the metric used to measure adherence for the purpose of quality improvement. Regime rationalisation, which is commonly instituted when adherence is low, can appear to improve unadjusted adherence without actually improving the overall nebuliser use.

[1] Hoo ZH et al, Patient Prefer Adherence 2016; 10: 1-14

Adherence metrics in 2013 & 2014					
.	% Unadjusted adherence Median (IQR)	% Normative adherence Median (IQR)	Wilcoxon signed rank test comparing % unadjusted adherence vs % normative adherence	Total nebuliser used per week Median (IQR)	Number of people with inadequate regime (%)
2013 (N = 89)	36.9 (19.1 to 64.7)	32.8 (14.5 to 58.1)	< 0.001	7.3 (3.2 to 13.6)	25 (28.1%)
2014 (N = 97)	44.9 (19.3 to 77.1)	39.6 (14.6 to 65.4)	< 0.001	7.8 (3.4 to 16.1)	20 (20.6%)

(No Image Selected)