Efficacy Marker	Baseline (off morphine)	Morphine	Placebo	P value (morphine v placebo)
Daytime cough frequency (c/hr)	22.97	6.26	20.94	<0.05
Night time cough frequency (c/hr)	4.84	0.71	4.17	<0.05
24 hour recording (c/hr)	17.94	5.25	17.00	<0.05
VAS Daytime (mm)*	47.68	16.32	43.52	<0.05
VAS night time (mm)	25.00	3.00	19.00	<0.05
CQLQ*	57.05	52.05	53.95	<0.05

Abstract S35 Figure 1 Median values for efficacy markers at baseline, on morphine and placebo *mean values.

scales (VAS)) and the cough quality of life questionnaire (CQLQ). For analysis we ran generalised estimating equations to compare morphine and placebo, adjusting for baseline measures and assessing any influence of treatment, sequence or period.

Results Low dose morphine reduced objective cough frequency compared to placebo by 71.8% over 24 hours. Morphine significantly reduced cough frequency overnight as well as during the daytime ($p < 0.05$) and responses were independent of baseline cough frequency. All patient reported outcomes were consistent with this effect ($p < 0.05$). The treatment effect was not significantly influenced by period or sequence. Overall morphine was well tolerated. There was one serious adverse event, unrelated to the study treatment.

Conclusions This is the first study to demonstrate a substantial objective reduction in cough frequency with low dose morphine in a clinically responsive group. Importantly this was accompanied by improvements in patient reported outcomes despite the short treatment duration used. The data suggests this population would be suitable for further investigation of the mode of action of opioids in chronic cough.

REFERENCE

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S36 COUGH SUPPRESSION THERAPY IN SECONDARY CARE

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Introduction Non pharmacological cough suppression therapy (CST) delivered by speech and language therapists is one of the few effective treatments available for patients suffering from a chronic refractory cough (CRC) although its use is not currently widespread. CST is a relatively new and developing area, our understanding of its mechanisms and the optimal treatment strategies are limited. We currently have no way of predicting response to therapy.

Method Retrospective review of records from patients undergoing CST in the period 2014–2017. Objective measures included quality of life (QOL) measured using the Leicester cough questionnaire (LCQ) and Laryngeal symptoms (Newcastle Laryngeal Hypersensitivity Questionnaire, LHQ).

Results 198 predominantly female (73.2%) patients with chronic refractory cough underwent CST. Baseline/follow up LCQ and LHQ scores were available on 183/122 patients and 144/90 patients respectively. Most had a cough of >1 year duration (85.9%), impaired QOL (Baseline LCQ mean=11.6 (SD 3.52) and significant laryngeal symptoms (Baseline LHQ: mean 14.7 SD 3.08). The median number of CST sessions was 3. CST improved both QOL (Mean change in LCQ=4.97 SD 3.81) and laryngeal symptoms (Mean change in LHQ=3.13 SD 2.81). Most patients had a response greater than the minimally clinically important difference (MCID) for both LCQ (84.4%) and LHQ (64.4%) but a significant subgroup showed no improvement in objective markers or were worse after CST (15.6% LCQ, 34.4% LHQ). Sex, age, previous smoking status, duration of cough and baseline LHQ and LCQ did not predict non response to treatment.

Conclusions This is the largest series of patients undergoing CST published so far. Most patients show meaningful improvements in both symptoms and quality of life. Use of CST is not currently widespread and it is important that we improve access to this therapy. There is a significant subgroup of treatment non responders. Identifying those most likely to benefit will help us to personalise therapy for this challenging group of patients.

Hot topics in home-based mechanical ventilation

S37 HOME MECHANICAL VENTILATION (HMV) AND HOME OXYGEN THERAPY (HOT) FOLLOWING AN ACUTE EXACERBATION OF COPD IN PATIENTS WITH PERSISTENT HYPERCAPNIA: RESULTS OF THE PER PROTOCOL ANALYSIS FROM THE HOT-HMV UK TRIAL

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Introduction Intention-to-treat analysis from the HOT-HMV UK trial showed an improvement in admission-free survival with the addition of home mechanical ventilation (HMV) to home oxygen therapy (HOT) in patients with persistent hypercapnia following an acute exacerbation of COPD