

further CT features of empyema which are less well described, or have only been reported in small groups of patients. The aim of this study was to establish the prevalence of the different CT imaging features of empyema in a large, well-characterised cohort of empyema patients.

Methods This was a retrospective cohort study comprising a subgroup of patients from the MIST 2 trial, who underwent a pre-treatment thoracic CT at a single institution. Patients in this trial had confirmed empyema using consistent diagnostic criteria. To ensure consistent and reliable image interpretation, each CT examination was assessed for predefined imaging features by three independent Thoracic Radiologists using a proforma. These features are listed in Abstract S62 table 1. We explored the sensitivity of the presence of five "classic" features of empyema described by Kearney *et al* (2000): loculation, parietal pleural thickening and enhancement and increased extrapleural fat thickness and attenuation.

Results 97 patients were included in the study. Imaging features are summarised in Abstract S62 table 1. 98.5% (95% CI 90.9% to 99.9%) of patients had at least two of five classic CT features of empyema. Additionally, we noted a significant number of patients with visceral pleural enhancement (66%), with indrawing/tenting of the visceral pleural (30%) and with subvisceral oedema (34%). Parenchymal changes were seen in the majority of patients. Associated consolidation was seen in the ipsilateral lung in 63% of patients; which was adjacent to the empyema in 87% of cases.

Conclusion This study describes the prevalence of multiple CT features of empyema and highlights the frequency of associated visceral changes. Many of the typical features of empyema were highly prevalent in this population but we also noted a high frequency of several other, less well-reported features. Subvisceral oedema is a previously unreported feature of empyema. These features may have implications for both diagnosis and prognosis.

REFERENCE

1. Kearney SE, Davies CWH, Davies RJO, *et al*. CT and ultrasound in parapneumonic effusions and empyema. *Clin Radiol* 2000; **55**:542–7.

S63 TELEHEALTH IN ACUTE COMMUNITY ACQUIRED PNEUMONIA: PROOF OF CONCEPT AND PROVISIONAL EVALUATION OF IMPACT ON HOSPITAL LENGTH OF STAY

doi:10.1136/thoraxjnl-2011-201054b.63

¹S Selvaraj, ²E Davies, ²C Humphries, ³K S Srinivasan, ³H Moudgil. ¹Princess Royal Hospital, Telford, UK; ²Telford and Wrekin PCT, Telford, UK; ³University of Keele Medical School, Keele, Staffordshire, UK

Background/Aims Although remote patient monitoring systems are rapidly emerging, much has concentrated on managing chronic rather than acute conditions. British Thoracic Society (BTS) guidelines on acute community acquired pneumonia (CAP) suggest not all patients with CURB65 scores 0 to 2 need hospital inpatient treatment and, with the alternative of a supervised environment, we report post hoc analysis of what was initially a proof of concept model adopting a Telehealth enabled system as a potentially effective option designed to reduce hospital length of stay (LOS).

Methods Over 1 year to May 2011, 138 patients (60 male, 78 female) with mean (SD, range) age 65.5 (18.7, 19–95) years were admitted with CAP were identified. Selection for Telehealth was guided by initial CURB65 scores, patient competence/compliance with technology, social considerations and geographical factors as the provision was only within the area supported by Telford & Wrekin (T&W) PCT; patients were declined while on intravenous antibiotics. Remote monitoring (blood pressure, heart rate, respiratory rate, oxygen saturation, temperature) was via a Broomwell Health system (wrist watch concept) with twice daily planned data downloads managed and triaged through a HUB system filtering

recordings to community based nurses. Data on LOS were skewed and non-parametric analysis of median (IQ) values undertaken to compare outcomes by area.

Results Abstract S63 table 1 shows raw data by age, sex, and LOS (days). 85% had CURB65 scores 0 to 2 and 17 (12.3%) died (8 had higher CURB65 scores). 33/138 (24%) were managed using Telehealth (majority CURB65 0–1) representing 35.5% from the T&W area. Comparing groups as a whole showed significantly ($p < 0.05$) lower (median, IQ) LOS (days) for T&W (4, 2–8) vs the rest (6, 4–9). Differences in initial CURB65 scores, age and sex distribution between groups were not statistically significant when considering those patients with CURB65 0–2 where again LOS was reduced for T&W ($n=75$) at 4 (2–7) vs the rest ($n=42$) at 6 (3.8–9.3). None on Telehealth died but one had an unrelated admission.

Abstract S63 Table 1

	All cases	Within T&W area	Not within T&W
Number (Male/Female)	138 (60/78)	93 (36/57)	45 (24/21)
Mean age (SD, range)	65.5 (18.7, 19–95)	66.4 (18.8, 19–95)	63.5 (18.4, 19–88)
Median age (IQR)	68 (53.8–81)	70 (53.5–82)	65 (50–81)
Mean (SD, range) length of stay	9.1 (12.5, 0–71)	8.0 (10.7, 0–56)	11.4 (15.4, 1–71)
Median (IQR) length of stay	5.5 (3–8.25)	4.0 (2.0–8.0)	6 (4.0–9.0)
CURB65 0–2 (%)	84.8	80.6	93.3
Deceased	17/138 (12.3%)	12/93 (12.9%)	5/45 (11.1%)

Conclusion We have shown the proof of concept in adopting this technology in managing acute CAP and although we provide additional evidence to demonstrate reduction in length of stay, more controlled studies with economic models and an assessment of the return on investment are required. Most of the observed benefit seems to stem from more actively managing and discharging patients with lower CURB65 scores but who nevertheless presented as acute hospital admissions and subsequently benefited from the same provisions offered by Telehealth.

S64 UNDERSTANDING BETTER THE PATHOPHYSIOLOGY OF ASPIRATION PNEUMONIA

doi:10.1136/thoraxjnl-2011-201054b.64

A Vaishnavi, I Satia, D Balasubramanian, R Sundar. Royal Albert Edward Infirmary, Wigan, UK

Background Aspiration of oropharyngeal or gastric contents into the lower airways can cause a number of syndromes including chemical

Abstract S64 Table 1 Clinical presentation and pre-disposing risk factors

Clinical presentation	N (out of 51)
Fever	20 (39%)
Tachypnoea	37 (73%)
Tachycardia	39 (76%)
Hypoxic	45 (88%)
Hypotension	8 (16%)
Altered mental state	28 (55%)
Crackles on auscultation	44 (86%)
Pre-disposing risk	22 (43%)
Nursing/residential home	35 (67%)
History of aspiration	20 (39%)
Dementia	24 (47%)
Oesophageal dysphagia	18 (35%)
PEG/NG fed stroke	4 (8%)