frequent in those who died (15/20 – 65%) than those that survived (5/40 – 12.5%; p<0.001). There was a non-significant trend for
DNAR to be less frequent in those ≤75 (6/31 – 33%) than those aged
>75 (12/29 – 67%; p=0.091) and they were more frequent in those
admitted from nursing homes (5/7 – 71.4%) than from their own
home (9/49 – 18.4%; p<0.001). 11/60 (18.3%) were admitted to
ICU but patients with DNAR were no more or less likely to be so
managed (5/18 – 27.8% cf 6/42 – 14.3%; p=0.279). There was
a trend for DNAR to have been recorded more often in the more
severely ill. Rates by CURB65 score were 0 – 1/5 (20%), 1 – 2/17
(11.8%), 2 – 3/15 (20%), 3 – 5/17 (47.1%), 4 – 3/5 (60%), 5 – 1/1
(100%); p=0.063.

The high frequency of DNAR orders suggests that pneumonia
deaths may not be as preventable as might be considered at first
sight. This may be especially true for those aged >75. In any assess-
ment of the predictability of death the use of DNAR orders should
be considered.

**Introduction** Early radiological diagnosis is an important quality
of care indicator in community acquired pneumonia (CAP), with
evidence for negative impact of time to X-ray (TXR) >4 hours on
length of stay and time to antibiotic administration. Despite growing
concern about impact of out-of-hours admission on outcomes in
a variety of acute medical conditions, there is little information on
impact of time of day on processes of care in CAP in the UK. We
analysed impact on TXR of out-of-hour’s admission via Emergency
department (ED) versus Medical assessment unit (MAU) in a 1000
bed teaching hospital.

**Methods** Retrospective review of 300 consecutive adult admis-
sions with radiologically confirmed CAP within a 3-month period.
Data included point of entry to hospital, in-hours (08h00–16h00)
versus out-of-hours admission, urgency of request, and time taken
to order and perform CXR.

**Results** 210 patients (70%) were admitted via ED and 90 (30%) via
MAU. Average TXR (TXR-Ave) overall was 3.30hrs and 80% had
TXR < 4 hours. 72% of ED’s CXR requests were urgent vs. 56% in
MAU (p=0.3). Daytime TXR-Ave in ED was significantly shorter
than MAU (2.20 hrs vs. 3.50 hrs; p=0.0005). TXR-Ave in ED was
2.50 hours overall and was not significantly affected by admission
out of hours. In contrast, after-hours admission via MAU was asso-
ciated with significantly increased TXR-Ave (6.0hrs out-of-
hours vs. 3.50 hrs in-hours; p=0.0001), and TXR > 4 hours (58% vs. 25%;
p=0.0025). Time from request to performance of CXR was not sig-
nificantly different in vs. out-of- hours, however average time from
admission to requesting CXR in MAU was significantly longer out of
hours vs. in-hours (4.57hrs vs. 2.03 hrs; p=0.0001).

**Conclusions** After- hours admission via MAU is associated with a
significant increase in diagnostic delay in patients with CAP, largely
attributable to delayed CXR requests. This may reflect delayed
clerking due to reduced staffing after hours. Organisational and
staffing factors associated with 4 hour ED trolley wait pressure may
account for swifter and more consistent processes of care in ED.
Further studies are required.

**Reference**

**P18**

**COMMUNITY ACQUIRED PNEUMONIA: IS MEDICAL
ASSESSMENT UNIT SAFE AFTER HOURS?**

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**Introduction** Acute respiratory infections (ARI)
cause significant morbidity and mortality: in the UK, during 2004,
33,957 deaths occurred due to pneumonia alone. Vitamin D metabo-
lates enhance immunity to a wide range of respiratory pathogens
in vitro, and numerous clinical studies have investigated whether vita-
m in D deficiency is a risk factor for ARI, or whether vitamin D sup-
plementation prevents ARI. Systematic reviews of this literature are
lacking, however. Our objective was to conduct a systematic review
of clinical studies investigating the relationship between vitamin D
status or the effect of vitamin D supplementation on risk of ARI.

**Methods** The PubMed database was searched on 7th June 2012
using the terms ‘vitamin D’ and ‘respiratory infection’. Cross-
sectional studies, case-control studies, cohort studies or clinical tri-
als in human subjects investigating the relationship between serum
concentration of vitamin D metabolites or the effect of vitamin D
supplementation on risk of ARI were included; ARI was defined as
any infection of the respiratory tract with symptom duration of
30days or less. Studies relating exclusively to tuberculosis were
excluded, as this is classically regarded as a chronic respiratory tract
infection, with symptom duration usually exceeding 30 days.

**Results** Thirty-one studies reporting data from a total of 43,272
participants were included in our review. Of these, 19 were
obervational studies (3 cross-sectional, 8 case-control and 8 cohort) and 12 were randomised controlled trials. Sixteen of the 19 observational studies reviewed reported statistically significant associations between vitamin D deficiency and susceptibility to ARI, and 3 reported no such association. Six of the 12 clinical trials reviewed reported protective effects of vitamin D against ARI, while five reported null effects, and one reported an adverse effect on pneumonia recurrence.

Conclusions Observational studies report consistent associations between vitamin D deficiency and susceptibility to ARI in a wide range of age-groups in diverse clinical settings. By contrast, randomised controlled trials of vitamin D supplementation for the prevention of ARI report conflicting results, possibly reflecting varying prevalence of vitamin D deficiency in study populations and/or heterogeneity in vitamin D supplementation regimens investigated.

FATIGUE AND POOR LUNG FUNCTION ARE SIGNIFICANTLY ASSOCIATED WITH IMPAIRED HEALTH-RELATED QUALITY OF LIFE (HRQOL) IN A LARGE COHORT OF PATIENTS WITH CHRONIC PULMONARY ASPERGILLOSIS

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Introduction Fatigue is a prominent disabling symptom in several chronic pulmonary diseases; however, its impact on HRQoL in patients with chronic pulmonary aspergillosis (CPA) has not been investigated.

Method Our 154 patients with CPA completed the Manchester COPD Fatigue Scale (MCFS, Thorax 2009)) and the SGRQ in our specialist referral centre. MCFS measures total fatigue and sub-components comprehensively. Lung function and body mass index were measured. Univariate and multivariate linear and binary analysis, and the principal component analysis (PCA) were used.

Results The mean (SD) age (61.1 (10.8)) years and 44% were female; FEV1% (63.3 (24.9)), BMI (23.7 (5.2)), SGRQ total score (55.6 (23.5) and MCFS total score (30 (14.9)).

P20

P21

LONG TERM ANTIFUNGAL TREATMENT (LTAFT) IS EFFECTIVELY ASSOCIATED WITH IMPROVEMENT IN HEALTH STATUS (HS) IN PATIENTS WITH CHRONIC PULMONARY ASPERGILLOSIS (CPA)

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Introduction CPA is a chronic progressive respiratory infectious disease results in significant lung tissue destruction with a 50%+ 5 year mortality. Response to antifungal therapy is slow, with ~80% of patients who respond doing so by 6 months. We recently demonstrated the reliability and validity of SGRQ in examining HS in CPA (Chest, in press), and now present longitudinal data on the efficacy of LTAFT in improving HS in CPA patients.

Method HS of 98 CPA patients were assessed 3 times over 6 months using the well-established standardised SGRQ. CPA severity was assessed using our published CPA banding system. FEV1, BMI, dyspnoea (using MRC dyspnoea scale) were measured.

Results Mean age was 58 years and 48% were female; 25, 58 and 15 had band 1, 2 and 3 CPA respectively. At visit 2 and 3 (V2 and V3), we found that overall total and domain SGRQ scores were either lower (improved health status) or similar compared to V1 (table 1). Categorizing the cohort by those who reported improvement or deterioration by a total SGRQ score of ≥4 at V3 compared to V1, we found that 48% improved, 22% remained stable and 35% deteriorated. The median (IQR) of total SGRQ score of the improved group at V3 was 58 (42–66) compared to 71 (60–79) at V1, and for the deteriorated group was 67.5 (57–76) at V3 compared to 62 (41–67) at V1. The deteriorated were older (62 (9.8) years versus 56.1 (9.3) (p=0.008); and tended to have lower BMI, more dyspnoea and worse lung function. Moreover, binary regression multivariate analysis showed that age maintained its association with deterioration in HS (OR 1.13, 95% CI 1.01–1.26, p=0.03) after correcting for gender, BMI and FEV1.

Of the 37 patients started on an antifungal agent at V1 who took it for 3+ months (including a 3 week IV course of amphotericin B), 22 (59%) improved, 11 (30%) were stable and 4 (11%) deteriorated at V3.

Conclusion LTAFT prevented/reduced the progression of CPA and patients preserved overall good HS. More therapeutic approaches for this progressive disease are urgently needed.