control group receiving ward level standard care was established retrospectively.

Results Forty patients were recruited into both the control and treatment groups. Results were analysed using Chi-squared statistics on Microsoft Excel. The primary outcome, namely; hospital mortality, demonstrated a significant difference between the groups ($p=0.048$) with no discernible difference in side effect profile.

Conclusion This data supports the use of tocilizumab in patients with COVID-19 disease, noting its positive effect on hospital mortality for COVID-19 patients on non-invasive respiratory support but not requiring critical care. Moreover, the limited side effect profile witnessed suggests tocilizumab can be safely administered in a non-critical care setting.

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USE OF ANGIOTENSIN-CONVERTING-ENZYME INHIBITORS AND ANGIOTENSIN RECEPTOR BLOCKERS IN COVID-19 INFECTION DOES NOT ADVERSELY AFFECT CLINICAL OUTCOMES INCLUDING NEED FOR NON-INVASIVE AND INVASIVE VENTILATION

A Amrapala, M Win, A Ainley. *Barking, Havering and Redbridge University Hospitals NHS Trust, London, UK*

10.1136/thorax-2021-BTSabstracts.298

Introduction It has been hypothesized that use of Angiotensin-Converting-Enzyme Inhibitors (ACE-I) and Angiotensin Receptor Blockers (ARB) are associated with worse outcomes in COVID-19 through upregulation of ACE2 receptors.¹ Recent studies have shown no association between ACE-I/ARB use and increased mortality but there is limited information on other markers of disease severity such as need for Non-invasive and invasive ventilation. We assessed the effect of ACE-I/ARB on the outcomes of COVID-19 patients.

Methods A retrospective observational cohort study of patients with confirmed COVID-19 admitted to the respiratory units during a 1-year period. Patient demographics, clinical and medication history and clinical outcomes were extracted from written and electronic records. Primary outcomes – length of stay (LOS), NIV requirement, intensive care (ITU) admission, intubation and death – were compared between those who received ACE-I/ARB concurrently with their COVID-19 treatment and those who did not. Statistical analysis was performed using chi-squared test and odds ratio (OR).

Results Of 521 patients with confirmed COVID-19 (median age 59 years, 62.6% male), 183 (35.1%) required NIV, 108 (20.7%) were admitted to ITU, 60 (11.5%) were intubated and 41 (7.9%) died. In total, 151 (29%) were on ACE-I/ARB treatment, most commonly for hypertension. There was no difference in median LOS between those on ACE-I/ARB treatment and those not (11 and 10 days respectively, $p=0.20$). There was no difference between NIV requirement (OR 1.13, 95% CI 0.71–1.56), admission to intensive care (OR 0.64, 95% CI 0.50–1.36), intubation (OR 0.65, 95% CI 0.43–1.58) and death (OR 1.15, 95% CI 0.53–2.11) between the two groups ($p>0.05$).

Conclusion There was no difference in clinical outcomes between COVID-19 patients on ACE-I/ARB and those who were not, in particular with regards to need for non-invasive and invasive ventilation. Our findings support current recommendations for continued use of ACE-I/ARB in COVID-19 infection.

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P190

THE IMPACT OF DRUG THERAPIES ON COVID-19 MORTALITY IN A UK TERTIARY CENTRE

¹T Kurmoo, ¹M Mayisha Ahmad, ²R Wang, ²N Chaudhuri. ¹University of Manchester, Manchester, UK; ²Manchester Foundation Trust, Wythenshawe, Manchester, UK

10.1136/thorax-2021-BTSabstracts.299

Introduction and Objectives The availability of treatment options for Covid-19 is rapidly expanding. Whilst the efficacy data is well-established from clinical trials, real-life efficacy of drug therapies remains lacking. We aimed to compare clinical outcomes between first and second wave of Covid-19 and determine real-world effectiveness of dexamethasone on 30-day mortality.

Methods This is a retrospective observational study. Clinical data and information regarding 30-day mortality, length of stay (LOS) and Intensive Care Unit (ICU) admission of hospitalised Covid-19 patients during early first wave (10.03.2020 to 13.04.2020) and second wave (01.12.2020 to 09.02.2021) were collected. Treatment was limited to second wave and included either dexamethasone only or both remdesivir and dexamethasone. The effectiveness of dexamethasone only on 30-day mortality was measured.

Results Of 373 patients (64.3% male) during the first wave, 24.9% died within 30 days. The 30-day mortality rate was lower during the second wave (61/324, 18.8%, p -value=0.064). Patients were younger (mean [SD], 60.0 [16.5] years) and had higher body mass index (mean [SD], 30.3 [11.0] kg/m²) during the second wave than the first wave (68.7 [14.8] years and 28.2 [7.70] kg/m²). In the first wave, no patients received specific drug therapy for Covid-19. However, 86.5% of patients received dexamethasone only during the second wave. The LOS for the first wave was longer (median (IQR): 5 (2–11) days) compared to the second wave (4 (2–9) days, $p=0.013$). ICU admission during the second wave (11.2%) was also lower than the first wave (23.4%, $p<0.001$). In second wave, 14.3% of patients who were given dexamethasone died within 30 days compared to 25% who had no treatment (p -value=0.088).

Conclusions In the real-world setting, there was an improvement in mortality, shortened hospital LOS and lower ICU admission rate between early first and second waves of the pandemic. The major difference in treatment strategy between the two waves was the approval of drug therapies in hospitalised patients. Dexamethasone reduced the 30-day mortality, although it did not reach statistical significance, likely due to the retrospective nature and small sample size of this study. Our findings corroborate clinical trial data on the benefit of dexamethasone therapy.

Perspectives on pleural disease

P191 THE BIOCHEMISTRY OF 'NON-SPECIFIC PLEURITIS'

¹A Sundaralingam, ¹D Addala, ²EO Bedawi, ²R Hallifax, ²V George, ¹R Banka, ²MA Ellayeh, ²N Kanellakis, ¹J Wrightson, ²NM Rahman. ¹Oxford Centre for Respiratory Medicine, Oxford University Hospitals NHS Foundation Trust, Oxford, UK; ²University of Oxford Respiratory Trials Unit, Oxford, UK

10.1136/thorax-2021-BTSabstracts.300

Introduction Histological analysis of pleural tissue from biopsy, particularly that obtained via a thorascopic approach is considered the 'gold' standard in securing a diagnosis in pleural disease and is recommended as the final step in the work-up of an unexplained exudative effusion.¹ A significant proportion of biopsies return a 'non-specific inflammation and fibrosis' histological pattern, often termed 'non-specific pleuritis' or NSP. It is suggested that whilst malignant pleuritis and TB pleuritis have distinct histological features, most other causes of pleural disease yield a non-specific histological finding.² This study aims to further our understanding of the pleural fluid characteristics underpinning this under-researched entity.

Methods A retrospective analysis of prospectively collected data on all local anaesthetic thorascopies (LAT) and image guided pleural biopsy (IGPBx) at a large tertiary centre from 2014–2019.

Results Across 529 pleural biopsies, 47% (250/529) yielded a histological finding of NSP, whilst 40% (212/529) demonstrated malignant pleuritis and 5% (28/529) granulomatous inflammation.

Pleural fluid (PF) characteristics at time of presentation across malignant pleuritis and NSP groups from 2017–2019, demonstrated a significantly greater proportion of exudative effusions with malignant histology: 99% (103/104) vs 91% (96/106) (χ^2 1df = 7.6, $p=0.006$).

In patients with an exudative effusion, a greater proportion of biochemically 'concordant' effusions (both protein and LDH meeting Light's criteria for exudate) were seen in malignant pleuritis: 81% (83/103) vs 63% (60/96) (χ^2 1df = 8.03, $p=0.005$) (table 1).

Abstract P191 Table 1

	Malignant Histology	NSP Histology
PF Exudate	103 (99%)	96 (91%)
PF Transudate	1 (1%)	10 (9%)
Concordant Exudate	83 (81%)	60 (63%)
Discordant Exudate	20 (19%)	36 (38%)

(PF characteristics across malignant and NSP histological subtypes, concordance defined as PF protein >30 g/L and PF LDH >170 IU/L, discordance as only one of PF >30 g/L or LDH >170 IU/L)

Discussion There is significant variation in PF biochemical characteristics between NSP and malignant pleuritis. The significant increase in biochemical discordance in the former suggests distinct underlying pathophysiological mechanisms that remain poorly defined. Further research to understand the biology of NSP is required.

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P192 A TRAINING PROGRAMME FOR WARD BASED RESPIRATORY NURSES ON CHEST DRAIN CARE AND MANAGEMENT

K James, A Thottiyil Joseph, J Storey, AO Clive. North Bristol NHS Trust, Bristol, UK

10.1136/thorax-2021-BTSabstracts.301

Background Chest drains (CD) are frequently inserted to manage pleural effusions and pneumothorax. However, they can be associated with harm (NPSA, 2020) and nurses' knowledge of chest drain care varies widely (Lehwaltdt, 2005). To our knowledge there are no formal training courses for ward nurses in CD management. We aimed to develop a formalised CD training programme for ward nursing staff to improve competence, confidence and safety.

Methods We developed a structured training module for ward nursing staff. This included an e-learning module, small group simulation training and supervised practice delivered by a Practice Development Nurse. The e learning module included:

- theoretical teaching about pleural pathologies, types of chest drains and bottles,
- caring for patients during drain insertion (including NatSSIP safety checks and post-procedure care)
- performing chest drain observations and completing the care pathway
- basic CD care (dressings, CD removal, patient transfers)
- safety and troubleshooting.

A questionnaire was completed before and after the course to evaluate knowledge, ability to maintain patient safety, and confidence in CD management and course satisfaction.

Results Between April and June 2021, 50 nurses working on a respiratory ward undertook the training programme. Confidence in chest drain management improved (44% rated themselves as confident before the course, compared with 96% afterwards). Similarly, participants' perceived ability to maintain patient safety improved from 44% of participants before the course to 96% afterwards.

The course was well received, with 100% of participants agreeing or strongly agreeing that the course enhanced their knowledge of the subject matter (14% and 86%, respectively).

Discussion This study demonstrates that a combination of theory and practical skills training for respiratory ward nursing staff improves knowledge and confidence in chest drain management. The training was quick and efficient to deliver and was well received.

We hope to expand the training to other areas (AMU, ICU) through chest drain champions in these areas. Also, we plan to develop rapid, refresher training to maintain competence.

Generic national training standards and online resources would be beneficial to standardise and improve standards and safety of ward-based chest drain care.