

Weekly Educational Bulletin

Our second update from HEE. We hope you find these useful, they are a way for us to keep in touch and provide some education which you can either look at now or file and read at a later date. Please do let us know if there are other topics you would like us to cover.

Please keep safe and well at this challenging time.

Coronavirus So Far....

The first case of Coronavirus in the UK was confirmed and recorded on the 31st January 2020. As this point Public Health responded to the risk of infection by quarantining at-risk individuals to stop the spread of the infection. The guidance for managing patients with symptoms and those at risk have changed several times since then and will continue to change, so it is important to continue to consult with the latest guidance.

Understanding the Science

https://www.rcgp.org.uk/about-us/rcgp-blog/covid-19--practical-things-for-generalpractice-to-do.aspx

This RCGP article explains that the reproductive number of this infection (R0) is 3. This means that every person with the infection infects 3 people. In comparison Seasonal Flu's R0 is 1.6, this is just one of the many reasons why this virus is posing such a Public Health problem. In comparison one of the most infective diseases is the Measles, this has an R0 number of between 12 and 18

The Case Case Mortality Rate of Covid-19 is thought to be around 1% compared to seasonal Flu which is 0.1%

In patients over 80 year-olds the CMR is thought to be 15% in comparison with seasonal flu which is 10%.



Essential Resources Recommended by the BMJ

- covid-19: latest case definition, investigation, and initial clinical management of possible cases:
- <u>https://www.gov.uk/government/publications/wuhan-novel-coronavirus-initial-investigation-of-possible-cases/investigation-and-initial-clinical-management-of-possible-cases-of-wuhan-novel-coronavirus-wn-cov-infection</u>
- Coronavirus: latest information and advice including updated list of high risk countries:
- <u>https://www.gov.uk/guidance/wuhan-novel-coronavirus-information-for-the-public</u>
- Guidance on isolation of healthcare workers:
- <u>https://www.gov.uk/government/publications/novel-coronavirus-2019-ncov-guidance-for-healthcare-providers-with-staff-who-have-travelled-to-china/guidance-for-healthcare-providers-healthcare-workers-who-have-travelled-to-china</u>
- Find your local Health Protection Team in England:
- <u>https://www.gov.uk/health-protection-team</u>
- covid-19: interim guidance for primary care including environmental cleaning after possible case:
- <u>https://www.gov.uk/government/publications/wn-cov-guidance-for-primary-care/wn-cov-interim-guidance-for-primary-care</u>
- covid-19: latest guidance for primary care on Health Protection Scotland (HPS):
- <u>https://www.hps.scot.nhs.uk/a-to-z-of-topics/covid-19/</u>
- World Health Organization (WHO): technical documents for coronavirus (covid-19) outbreak:
- <u>https://www.who.int/health-topics/coronavirus</u>
- European Centre for Disease Prevention and Control: latest guidance for EU/EEA: <u>https://www.ecdc.europa.eu/en/novel-coronavirus-china</u>
- US Centers for Disease Control and Prevention: latest guidance, advice and information: <u>https://www.cdc.gov/coronavirus/2019-ncov/index.html</u>

Numerical Facts we know so far:

- The median estimated incubation period is five to six days (range 0 to 14 days).
- The median age of confirmed cases is around 59 years.
 - Initial data indicate that more than 80% of patients have asymptomatic or mild disease and recover
 - o but about 15% may get severe disease including pneumonia
 - around 5% become critically unwell with septic shock and/or multiorgan and respiratory failure.
 - The case fatality rate is estimated at approximately 2% overall, but ranges from 0.2% in people under 50 to 14.8% in those over 80 and is higher among those with chronic comorbid conditions.

NHS Health Education England

Summary Guide In the BMJ: 2020;368:m800



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The BMJ has also Provided further Telephone Triage Advice: Covid-19: A remote assessment in Primary Care (10 minute consultation): BMJ 2020;368:m1182



https://www.bmj.com/content/368/bmj.m1182?utm_source=The%20British%20Medical%20Association&utm_me_ dium=email&utm_campaign=11428860_GP%20ENEWSLETTER%20260320%20-%20COVID19%20-%20ENGLAND&utm_content=BMJ%20remote%20consultations&dm_i=JVX,6SYKC,36I505,R8YPS,1

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Links from Last week's Bulletin

- British Cardiovascular Society: <u>https://www.britishcardiovascularsociety.org/news/ACEi-or-ARB-and-COVID-</u> <u>19#.XnH_DXRA6lp.whatsapp</u>
- Kidney Care UK
 <u>https://www.kidneycareuk.org/news-and-campaigns/coronavirus-advice/</u>
- The Centre for Evidenced based Medicine https://www.cebm.net/oxford-covid-19/
- NHS England and NHS Improvement Events
 <u>https://nhsevents.info/coronavirus-practical-advice/</u>
- The Royal College of Obstetricians and Gynaecologists https://www.rcog.org.uk/en/news/professional-bodies-response-togovernment-advice-for-pregnant-women-to-self-isolate/
- British Society for Rheumatology
 https://www.rheumatology.org.uk/news-policy/details/Covid19-Coronavirus-update-members
- British Medical Journal
 <u>https://www.bmj.com/content/368/bmj.m1086</u>



Weekly Clinical Topic – Acute (Adult) Respiratory Distress Syndrome (ARDS)

There are a significant number of patients being admitted to ICU at present with ARDS secondary to Covid-19.

It therefore seemed important to provide some information and further resources around this condition.

What is **ARDS**

This is a condition that can affect all adult patients. It occurs when non cardiogenic pulmonary oedema (secondary to acute damage of the alveoli) leads to acute respiratory failure. (Patient.co.uk)

It is a rapidly progressive disease that occurs in critically ill patients, most notably now, patients suffering from severe disease caused by covid-19.

Clinical Features

- **Symptoms**: Increasing dyspnoea. Recent direct or indirect injury to the lungs
- **Signs**: cyanosis (reflecting hypoxia refractory to oxygen therapy), tachypnoea, tachycardia, peripheral vasodilatation, bilateral fine inspiratory crackles.
- Investigations:
 - Xray presence of bilateral opacities
 - Presence of hypoxaemia

ARDS is caused by:

- Direct injuries to the lungs
 - Aspiration pneumonia
 - Near drowning
 - o Smoke inhalations
 - o Burns
- Indirect injuries to the lungs
 - \circ Sepsis
 - Blood transfusions
 - o Medication reactions
 - o Acute pancreatitis
 - o Eclampsia

Many people still don't develop ARDS even with these injuries but factors that can make this more likely are, *recent chemotherapy, oxygen use, obesity, smoking, diabetes*



Management of ARDS

Patients with ARDS are often admitted to ITU for supportive treatment and to manage the underlying cause.

Most patients require mechanical ventilation if they have severe hypoxaemia Po2 <60mmH (8.3kPa).

Mortality is around 30-40%

ARDS and COVID-19: Evidence from JAMA Intern Med 13 March 2020

ARDS from Covid 19 is much less likely with younger age, and normal BP

This study consisted of 201 adult patients at a single centre in Wuhan, China. It was a retrospective study.

The key results were (Univadis):

- Median age, 51 years; 63.7% men.
- 82.1% required oxygen.
- 41.8% (n=84) developed ARDS, of whom 52.4% (n=44) died.
- Factors associated with ARDS:
 - Older age: difference, 12.0 years (P<.001>
 - **Higher baseline temperature**: difference, 0.30°C (P=.004).
 - More dyspnea: difference, 33.9% (P<.001>
 - **More hypertension:** difference, 13.7% (P=.02).
 - More diabetes: difference, 13.9% (P=.002).
 - Less receipt of antivirals: difference, -14.4% (P=.005).
 - More receipt of methylprednisolone: difference, 49.3% (P<.001>
 - **Higher neutrophil counts:** biomarkers of organ damage, inflammation, and coagulopathy; lower lymphocyte counts.
- Patients who died vs survived were:
 - Older: difference, 18.0 years (P<.001 class="">
 - Found to have lower rates of high fever: difference, -31.8% (P=.007).
 - Likelier to have hypertension: difference, 18.9% (P=.05).
 - Less likely to receive antivirals: difference, -40.7% (P<.001>

Further Resources

E-learning RCGP: Manging Patients with Chronic Respiratory Symptoms during a Pandemic, <u>https://elearning.rcgp.org.uk/course/view.php?id=376</u>

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There are a number of learning modules on e-LfH, https://portal.e-lfh.org.uk/Search

- ARDS
- Ventilation in ARDS
- ARDS: Radiology and cause
- Systemic Inflammatory Response and Multiple Organ Failure

BMJ: Arterial Blood Gases a guide to interpretation, <u>https://learning.bmj.com/learning/module-intro/arterial-blood-</u> gas.html?moduleId=5004327&searchTerm=%E2%80%9Cacute%20respiratory%E2 %80%9D&page=1&locale=en_GB