General Practice Research Review™

Making Education Easy

Issue 86 - 2020

In this issue:

Welcome to the latest issue of General Practice Research Review.

The management of uncertainty is said by some general practice experts to be one of general practice's defining principles. The arrival of COVID-19 has resulted in considerable uncertainty. Our Australian experience is markedly different from that in Europe and the US. The numbers with proven infection and the number of individuals succumbing to the disease remain low here. The measures taken to control viral infection in Australia are extreme and have impacted considerably on the financial security of a large number of Australians. We in general practice have had to rapidly adapt to different ways of practising. This issue of General Practice Research Review looks at what we know about COVID-19, what we don't know, offers some thoughts on telemedicine, and asks us to consider what the recovery phase will look like for general practice.

Please stay safe in these times and thank you for your support.

Kind Regards,

Professor Gerard Gill
gerard.gill@researchreview.com.au

What we know so far: COVID-19 current clinical knowledge and research

Author: Lake M

Summary: In December 2019, health authorities in Wuhan, China, identified a cluster of pneumonia cases of unknown aetiology linked to the city's South China Seafood Market. The subsequent exponential rise in cases was accompanied by unprecedented public health action, including the wholesale lockdown of Wuhan. Investigations revealed a novel coronavirus, SARS-CoV-2 (now known as COVID-19), to be the causative agent. This article provided a brief review of current knowledge of COVID-19 acute respiratory disease, and summarised its relevant clinical features.

Comment (GG): A useful and reasonably up-to-date review article published by the Royal College of Physicians London which summarises our current state of knowledge.

Reference: Curr Clin Know Res Clin Med (Lond) 2020;20(2):124-7
Full text

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges

Authors: Lai C-C et al.

Summary: The emergence of COVID-19 in China at the end of 2019 was responsible for a large global outbreak of the disease. It is spread by human-to-human transmission via droplets or direct contact. Infection has a mean incubation period of 6.4 days and a basic reproduction number of 2.24–3.58. Fever and cough are the most common symptoms in patients with pneumonia due to COVID-19, and CT images of the chest commonly show bilateral lung involvement with ground-glass opacity. Controlling infection to prevent the spread of COVID-19 is currently the best primary intervention. However, public health authorities need to keep monitoring the situation closely to learn more about the novel virus and its associated outbreak.

Comment (GG): This report from Taiwan offers insight into what severe COVID-19 infections look like. It is a little dated but I am unable to find any similar literature on the severe end of this infection from the European or North American catastrophes.

Reference: Int J Antimicrob Agents 2020;55(3):105924
Full text

COVID-19: Knowns, unknowns, and questions

Authors: Weston S & Frieman M

Summary: The global spread of COVID-19 after its origins in the Hubei province in China in late 2019 demonstrates the epidemic potential of coronaviruses. The fast spread of COVID-19 worldwide in only 2 months demonstrates its rapid transmissibility and associated morbidity and mortality. This commentary highlighted current knowledge of coronavirus biology and addressed questions about the COVID-19 outbreak.

Comment (GG): A reflective article trying to identify where our research priorities should lie. It is however strong on the biological approach and does not really consider the emotional and social impact of the disease.

Reference: mSphere 2020;5(2):e00203-20
Full text

The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - an update on the status

Authors: Guo Y-R et al.

Summary: On 30 January 2020, the World Health Organization declared the COVID-19 epidemic to be a public health emergency of international concern. As of March 1, 2020, there were 87,137 confirmed cases of COVID-19 globally (79,968 in China and 7169 outside of China), with a mortality rate of 3.4%. Independent research groups have identified that the novel coronavirus responsible for COVID-19 is a β-coronavirus, and has a highly identical genome to bat coronavirus. It uses the angiotensin-converting enzyme 2 receptor, and mainly spreads through the respiratory tract. The clinical symptoms of COVID-19 include fever, cough and fatigue (with gastrointestinal symptoms in a small percentage of patients). The elderly and those with comorbidities are most susceptible to infection and serious outcomes such as acute respiratory distress syndrome and cytokine storm. This review summarised current knowledge of the epidemiology, pathogenesis, and clinical characteristics of COVID-19, and discussed current treatment options.

Comment (GG): A useful clinical features review from a Singaporean team summarising the Chinese experience of COVID-19. Like much of the current literature available it is very weak on identifying those at risk of infection and offering advice on how to manage those with clinically mild infections.

Reference: Mil Med Res 2020;7(1):11
Full text

Australian College of Rural and Remote Medicine (ACRRM) Professional Development Program (PDP) participants can claim Educational Activity hours in the self-directed learning category for reading Research Reviews.

Please CLICK HERE to download CPD information

Report on the epidemiological features of coronavirus disease 2019 (COVID-19) outbreak in the Republic of Korea from January 19 to March 2, 2020

Authors: Korean Society of Infectious Diseases et al.

Summary: This report summarised the epidemiological features of COVID-19 in the Republic of Korea from January 19 to March 2, 2020. An exponential increase in COVID-19 cases during this period appeared to be mainly due to exposure among members of a religious group in Daegu, with associated community and hospital transmission. As of March 2, 2020, the Republic of Korea had the second-largest number of confirmed cases (4212) after China (80,026).

Comment (GG): The Korean experience of this infection mirrors that of Australia. It is useful to understand that this is the disease of clusters. In Korea it was a religious sect, in Australia a cruise liner. It is a useful account because it also looks at the incidence of paediatric infection and, because of the much higher incidence of testing for the virus, gives us a better indication of the lethality of the infection compared to the data we are seeing from Europe and North America with a high reported mortality where it seems obvious that the overall infection rate must be much higher but has remained unrecognised. The incomplete recognition of milder cases needs consideration.

Reference: J Korean Med Sci 2020;35(10):e112
Full text

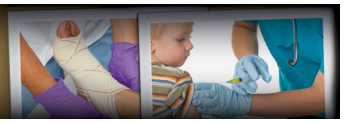
Risks of novel coronavirus disease (COVID-19) in pregnancy

Authors: Panahi L et al.

Summary: This review examined the possibility of transmission of COVID-19 from mother to fetus during pregnancy. A search of PubMed, Scopus, Embase, Science Direct, and Web of Science identified 13 articles about vertical transmission of COVID-19 in pregnancy that were suitable for inclusion. A review of the data found that COVID-19 can cause fetal distress, miscarriage, respiratory distress and preterm delivery in pregnant women. However, it does not infect newborns. No reports of vertical transmission in pregnancy were found. The clinical symptoms of COVID-19 in pregnant women were similar to those in non-pregnant women.

Comment (GG): This rapid review by an Iranian team considers the implications for pregnant women becoming infected. Unlike swine flu it does not appear that pregnancy is a risk factor for severe disease but we need to remind ourselves that like all infectious diseases associated with fever there is an increased risk of miscarriage and premature labour.

Reference: Arch Acad Emerg Med 2020;8(1):e34
Full text



Telemedicine and the COVID-19 pandemic, lessons for the future

Authors: Bashshur R et al.

Summary: This editorial discussed the mass conversion to telemedicine during the current COVID-19 crisis, and how telemedicine has demonstrated utility as an effective tool for social distancing in clinical or other settings. The current situation is in stark contrast to a long history of slow adoption of telemedicine, and it is shortsighted to think the utility of telemedicine will be limited to handling just the current crisis.

Comment (GG): This editorial article is quite a thought-provoking summary of how we should consider the issues around implementing widespread telemedicine. It raises the issues of how we maintain quality of care, equity of access and equity of outcome. It really has a number of take-home messages that all in general practice should consider.

Reference: Telemed J E Health 2020; published online Apr 8
Full text

Strategies for effective telehealth sessions

Author: Micco J

Summary: In this article, Dr Jamie Micco (co-founder of the Concord Center and a lecturer in Psychology at Harvard Medical School) presents a guideline for maximising the efficacy of telemedicine sessions. She suggests the clinician should have access to several telemedicine platforms in case of equipment failure; remind patients that telehealth works better on a computer or high quality tablet rather than a phone; ask patients to use a private, free space for the session; check the patient's volume is turned up and the webcams and microphones are working prior to the session; encourage patients to use earbuds or earphones for privacy; and have a back-up plan.

Comment (GG): This is a website from the Anxiety and Depression Association of America. I have included it because it has a very useful series of links to a number of American resources on how to utilise telemedicine. Most of us in Australian general practice have not been exposed to telemedicine as there was no financial remuneration to do so. Given the rapidity with which we have had to introduce this and particularly its eminent role in the provision of mental health care, I think this website has quite a lot to offer Australian general practice.

Reference: Anxiety and Depression Association of America (ADAA) website
Full text

Detection of SARS-CoV-2 in different types of clinical specimens

Authors: Wang W et al.

Summary: This Chinese study investigated the biodistribution of COVID-19 in different tissues of affected patients. 1070 specimens were collected from 205 patients with confirmed COVID-19 at 3 hospitals in the Hubei and Shandong provinces and Beijing, China, from January 1 through February 17, 2020. Pharyngeal swabs were collected from most patients 1–3 days after hospital admission, and blood, sputum, faeces, urine, and nasal samples were collected throughout the illness. Bronchoalveolar lavage fluid and fibrobronchoscope brush biopsy were sampled from patients with severe illness or undergoing mechanical ventilation. Most of the patients presented with fever, dry cough, and fatigue; 19% of them had severe illness. Bronchoalveolar lavage fluid specimens had the highest positive rates of COVID-19 infection (93%), followed by sputum (72%), nasal swabs (63%), fibrobronchoscope brush biopsy (46%), pharyngeal swabs (32%), faeces (29%), and blood (1%). None of the 72 urine specimens tested positive.

Comment (GG): One of the diagnostic dilemmas we have is what testing to use, what samples to take and what are the positive and negative predictive values of these tests. I was unable to find any current articles looking at these important aspects for general practice. Are the respiratory swabs we take reliable and do they have a high possibility of confirming or excluding those with a COVID-19 infection? This article is a brief research letter from a Chinese team suggesting that there may be a high rate of false negatives in those with symptomatic infections. This is obviously an area of great importance to us as we are relying on testing to isolate, admit for definitive care and protect our health workforce.

Reference: JAMA 2020; published online Mar 11
Full text

GP members of the Royal Australian College of General Practitioners (RACGP) are able to include Research Reviews as part of the self-record unaccredited category 2 QI&CPD points by logging onto the RACGP website http://www.racgp.org.au/

Please CLICK HERE to download CPD information

Impact of the Canterbury earthquakes on dispensing of psychiatric medication for children and adolescents

Authors: Beaglehole B et al.

Summary: This NZ study evaluated the psychiatric impact of the Christchurch earthquakes on children and adolescents. Dispensing data for children and adolescents living in Canterbury were compared with national dispensing data for psychotropic medication. After adjustment for longer-term trends and population adjustments, the Canterbury earthquakes were found to be associated with a slight increase in dispensing of antidepressants in children and adolescents. However, dispensing rates for antipsychotics, anxiolytics, sedatives/hypnotics and methylphenidate did not change.

Comment (GG): I have included this article as it shows there is resilience in populations. A major disaster in New Zealand did not appear to have impacted on psychiatric medication use in children and adolescents. As this is the age-group where these conditions commonly present it suggests that natural disasters are not potent sources of psychiatric morbidity. It gives us hope that we will see this with COVID-19 and not find ourselves inundated with distressed individuals.

Reference: Br J Psychiatry 2020;29:1-5
Full text

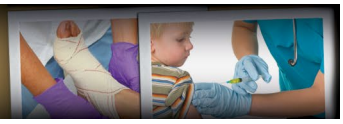
Consistent detection of 2019 novel coronavirus in saliva

Authors: To K et al.

Summary: Nasopharyngeal and oropharyngeal swabs are currently recommended for sampling patients for COVID-19. However, they require close contact between healthcare workers and patients, and are uncomfortable for the patient. Saliva specimens are easier to obtain, and minimise the chance of healthcare worker exposure to COVID-19. This study tested saliva specimens from patients with suspected COVID-19 infection in Hong Kong. A total of 7 male and 5 female patients with laboratory-confirmed COVID-19 infection were included (age 37–75 years). Saliva specimens were collected a median of 2 days after hospitalisation (range, 0–7 days), and COVID-19 was detected in the initial saliva specimens of 11 patients (91.7%). Serial saliva monitoring generally showed a declining trend in viral load.

Comment (VE): There is currently rapid publishing of COVID-19 research in order to provide clinicians with evidence-based information to deal with our current pandemic. Not all has been peer reviewed and studies may have small numbers. This is a study of only 12 patients but presents a possible method for diagnosing and viral load monitoring with less clinician contact than nasopharyngeal or oropharyngeal swabs. The authors outline that as they found live coronavirus to be present in saliva, transmission can occur directly or indirectly even among patients without coughing or other respiratory symptoms, reinforcing the need for the wearing of surgical masks … of which most of us have minimal supplies.

Reference: Clin Infect Dis 2020; published online Feb 12
Full text



COVID-19 and smoking: A systematic review of the evidence

Authors: Vardavas C & Nikitara K

Summary: This systematic review evaluated COVID-19 outcomes in smokers. A search of PubMed and ScienceDirect identified 5 studies that reported smoking status of patients infected with COVID-19. All of the studies were in China (4 in Wuhan), and sample sizes ranged from 41–1099 patients. In the largest study that assessed severity, there were higher percentages of current and former smokers among patients that needed intensive care unit (ICU) support, mechanical ventilation, or who had died, and a higher percentage of smokers among the severe cases. Smokers were 1.4 times more likely to have severe symptoms of COVID-19 (risk ratio [RR], 1.4; 95% CI 0.98–2.00) and 2.4 times more likely to be admitted to an ICU, need mechanical ventilation or die compared to non-smokers (RR, 2.4; 95% CI 1.43–4.04).

Comment (VE): The evidence is increasing that people who smoke are more vulnerable to adverse outcomes if infected with COVID-19. In light of this, the Cochrane Collaboration have updated a systematic review on smoking interventions and advise with moderate certainty that mobile phone text messaging may be effective in supporting people to quit smoking, increasing quit rates by 50–60%. Text messaging could be an option while we are limiting face-to-face consultations. If interested, further systematic reviews on topics related to COVID-19 can be found on the Cochrane website. In addition, the World Health Organization has made worldwide COVID-19 research available free of charge and adds to a list daily on their website.

Reference: Tob Induc Dis 2020; published online Mar 20
Full text

Potential role of inanimate surfaces for the spread of coronaviruses and their inactivation with disinfectant agents

Author: Kampf G

Summary: It has been postulated that COVID-19 can be transmitted from contaminated dry surfaces to mucous membranes of the nose, eyes or mouth. A recent review on the persistence of coronaviruses on inanimate surfaces found that human coronaviruses such as Severe Acute Respiratory Syndrome (SARS) coronavirus, Middle East Respiratory Syndrome (MERS) coronavirus or endemic human coronaviruses (HCoV) can persist on metal, glass or plastic for up to 9 days. Some disinfectant agents (e.g. 62–71% ethanol, 0.5% hydrogen peroxide and 0.1% sodium hypochlorite) can effectively reduce coronavirus infectivity within 1 min. Other compounds such as 0.05–0.2% benzalkonium chloride or 0.02% chlorhexidine digluconate are less effective.

Comment (VE): With many of our usual disinfectant agents not available, this is a helpful article to refer to if needing to source alternative products and be assured of effectiveness, particularly as some products are less effective than others against coronaviruses. The authors of this paper reviewed all available data on coronaviruses on inanimate surfaces, finding survival of up to 9 days. While there was no data on transmissibility of coronaviruses from such contaminated surfaces to hands, studies have shown that a 5-second contact with influenza A virus on surfaces is sufficient to transfer 31.6% of the viral load to the hands.

Reference: Infect Prev Pract 2020; published online Feb 12
Full text

General Practice Research Review™

Independent commentary by Professor Gerard Gill and Valerie Edge

Professor Gerard Gill MBBS PhD FRACGP FAFPHM FARGP.

Professor Gill graduated in medicine from the University of Tasmania in 1975 and after internship at the Royal Hobart Hospital, and further hospital experience at Geelong Hospital and in the Rotating Residency Program in Melbourne, entered general practice in the northern suburbs of Launceston in 1980. While in practice he gained a Diploma in Obstetrics, and the Fellowships of the Royal Australian College of General Practitioners and the Australasian Faculty of Public Health Medicine. He was one of the ten sponsored Master of Applied Epidemiology in General Practice Evaluation scholars from 1994–6 at the National Centre for Epidemiology and Population Health at the Australian National University. For full biography please click here.

Valerie Edge RN CDE

Val graduated in nursing from Deakin University in 1989 and after a graduate nurse year at Monash Medical Centre then worked as an oncology nurse/manager and case manager in various public and private hospitals in Melbourne over the next 10 years. During this time she completed a Graduate Diploma in Cancer Nursing and Palliative Care at La Trobe University and also a Graduate Diploma in Case Manager at The University of Melbourne. The next few years involved starting a family and working part time in a family business and on nurse bank at Peter McCallum Hospital.

Since 2008, Val has worked at Wingrove Medical Clinic in Fairfield as a practice nurse and diabetes educator. This role includes working two days providing diabetes education/chronic disease management and two days in the treatment room providing a range of nursing services. Some of these years at Wingrove Medical Clinic have also involved a part time role elsewhere, first as a member of the diabetes HARP team at St Vincent's Hospital Melbourne and then at Reservoir Medical Group providing diabetes education. Val is a credentialled diabetes educator and accredited nurse immuniser, having completed a Graduate Certificate in Diabetes Education at Deakin University and the Understanding Vaccines and the National Immunisation Program provided by South Australia Health. Most recently, Val has completed a Masters in Advanced Nursing Practice (NP) at the University of Melbourne, focusing on management of people with type 2 diabetes in primary care.

Australian Research Review subscribers can claim CPD/CME points for time spent reading our reviews from a wide range of local medical and nursing colleges. Find out more on our CPD page.

Research Reviews are prepared with an independent commentary from relevant specialists. To become a reviewer please email geoff@researchreview.com.au.

Research Review Australia Pty Ltd is an independent Australian publisher. Research Review receives funding from a variety of sources including Government depts., health product companies, insurers and other organisations with an interest in health. Journal content is created independently of sponsor companies with assistance from leading local specialists. **Privacy Policy:** Research Review will record your email details on a secure database and will not release them to anyone without your prior approval. Research Review and you have the right to inspect, update or delete your details at any time. **Disclaimer:** This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.

Research Review publications are intended for Australian health professionals.

RESEARCH REVIEW™ Australia's Leader in Specialist Publications

