Guidance for members during the Covid-19 pandemic

April 5, 2020

Part I. Overview

Executive summary

This document is intended as a multidisciplinary guide for the members of ANZHNCS and incorporates available information and specific factors that are likely to affect all members. More detailed information from the ANZHNCS is available.

It is expected that all members will continually update themselves with the guidance from governmental agencies, State/Territories, local health networks and individual professional societies.

Key Practice Points

1. High risk procedures

- Any aerosol or droplet generating procedure in the upper aerodigestive tract is a high risk procedure if the patient is infected. These include
    1. Tracheal intubation
    2. Non-invasive ventilation
    3. Tracheostomy
    4. Manual ventilation prior to intubation
    5. Other potentially aerosol generating procedures
- It seems prudent to regard the following procedures/assessment as aerosol generating; nasendoscopy, insertion and removal of nasogastric tubes, insertion and removal of voice prostheses, close inspection of the oral cavity, dysphagia assessment and any situation where cough or sneeze may be induced.

2. Risk mitigation

Patients

- Adherence to policy regarding screening/testing for COVID-19.
- Delay or defer outpatient appointments were possible
- Adhere to department policy guidelines regarding management of patients with reduced staffing/resources
- Use of Telehealth where it is practical in place of face:face consults
- Plan for how COVID-19 confirmed/risk patients who are on treatment will be managed/isolated

Clinicians

- All clinicians to ensure they comply with policy regarding screening/testing of themselves
- All clinicians to ensure that they are up to date with Personal Protective Equipment (PPE), in particular donning and doffing and comply with local policy regarding use of PPE for procedures/patient contact.

Multidisciplinary Team

- Minimise the number of clinicians in the room particularly during aerosol generating procedures and ensure all relevant policies are adhered to regarding conducting the procedure and recording who is present.
- Multi-disciplinary meetings should be continued where able adhering to distancing and/or using telehealth facilities.

Global considerations around this document

1. There are increasing numbers of cases of Covid-19 in Australia and New Zealand. If current measures do not flatten the curve it is likely Australian numbers will reach or exceed 20 000 in the next 14 days. Intensive care requirements are delayed by some weeks behind the development of cases[1]
2. Take this guidance with consideration of where you are in the development of the pandemic. It is written when numbers are small and urgent elective procedures are a possibility. It is clear that in areas completely over-run like New York City guidance documents from a week or two prior have become irrelevant to many institutions.

[1] ICU use in Italy

3. Review the options for your service or practice: can you treat a mixture of Covid+ and Covid- cases; how will you screen or stratify patients; where can you get your patients tested. Read an outline on this such as the Zhejian manual[2]

4. Familiarize yourself with the illness. There are many outlines: from Wuhan[3], from a critical perspective[4]

5. Front line clinicians have a significant risk of infection. Learn how to don (fairly easy) and doff (easy to self contaminate) PPE and when to use it.

6. Transmission occurs via droplet and contaminated surface (fomite) spread. Aerosol spread is being debated.

7. Clinicians exposed to droplets and aerosols from the airway, nose and oral cavity have significant risks of infection. Special societies have given advice about procedures like routine oral examination, nasendoscopy, and tracheostomy care. Links are in the main document.

8. Many individual specialist Societies have given guidance; these should also be referred to. Many are linked in the detailed section below. They cover in detail
   a) Reduction in physical patient attendance
   b) Rescheduling of elective procedures
   c) Risk to clinicians from routine Head and Neck procedures and examinations
   d) Weighing up the risk of therapy versus the increased risk from therapy in the time of Covid-19

9. It is unclear how best to approach the patient with active Covid-19 infection and concurrent cancer. This will depend on:
   a) how sick the patient is,
   b) the general pandemic situation and resource availability,
   c) the ability of local resources to deal with a mixture of Covid+ and covid- patients,
   d) the oncological situation of the patient.

[2] ASOHNS_Chinese_approach
[3] Wuhan advice
[4] Internet Book of Critical Care

Part II.
Details and links

1. Introduction

All members of the Society would by now be aware of the rapidly escalating number of cases in Australia and New Zealand. Current doubling time remains on the order of 4 days[5]

It is now clear that the aim of many governments is to "flatten the curve" and spread the number of cases more widely, thus reducing the risk of overwhelming the health system, as well as reducing overall numbers of cases[6].

Front line clinicians are clearly becoming infected in significant numbers. Guidance must thus take into account not only care of the patients but also prevention of infection in clinicians.

2. Intent

Many individual societies have issued guidance documents for their members. As a multi-disciplinary society we regard it is more important to point out these sources of information and make comments on specific factors that are likely to affect all members whichever discipline they may represent.

It is expected that all members will continually update themselves with the guidance from governmental agencies as well as their local health networks. All of these will undoubtedly be updated as the situation and understanding of the disease changes.

3. General principles

3.1. Understand the disease

The WHO and national bodies use a fairly restricted set of symptoms (fever, cough, dyspnoea, sore throat) plus epidemiological features to divide cases into proven [positive test], probable [symptomatic household contact of a proven case], and possible [symptomatic with contact with someone at significant risk of COVID-19 or severe pneumonia of unknown cause].

It is clear that the range of symptoms is significantly wider that that[7]. Systemic symptoms like myalgias and rigors and fatigue are common. Anosmia has been pointed out as a symptom[8] but more importantly up to 20% may have diarrhea. About 80% of

[5] Many visualizations exist: the one at Johns Hopkins is widely used Hopkins map
[6] flatten curve
[7] nejm_symptoms
[8] anosmia

cases are mild, 15% severe and 5% critical. Pneumonitis may progress rapidly. Mortality appears to be about 50% in the critical category (ARDS, multi-organ failure and the like). Comorbidities propose significantly higher risk of severe illness and death[9].

3.2. Understand transmission (as much as we do at present)

This is clearly an evolving field.

Laboratory investigations[10] demonstrate that SARS-CoV2 (the causative organism) is found in aerosols and is detectable for at least 3 hours in such form. These aerosols were generated with powerful nebulizers and it is not clear to what extent it reflects the usual means of spread via coughing or sneezing. The role of aerosols is thus contentious: the WHO does not currently consider aerosol spread to be important, but does still recommend the use of respirators where aerosols are produced from clinical cases[11]

It is viable on surfaces although the duration of viability depends very much on the surface: plastic and steel viability is up to72 hours and cardboard and paper up to 24 hours. This is in keeping with current views that transmission takes place directly through droplets [12]and indirectly through fomites.

3.3. Review the Chinese approach

Although there are suggestions that the data from China is now of dubious provenance for political reasons, given the success in ramping up their services it is worth examining their approach set out in the Handbook of Covid-19 prevention and treatment of the First Affiliated Hospital & Zhejian University School of Medicine. This is available at several places on the interwebs[13].

3.4. High risk procedures

Any aerosol or droplet generating procedure in the upper aerodigestive tract is a high risk procedure if the patient is infected. The risk of particular procedures in covid-19 is unknown. In the context of SARS procedures procedures with demonstrated increased risk of transmission were[14]:

1. tracheal intubation [OR ~6]
2. non-invasive ventilation [OR ~3]
3. tracheostomy [OR ~4]
4. manual ventilation prior to intubation [OR ~3]

[9] milan
[10] aerosol_life
[11] WHO
[12] aerosol1, aerosol2 and aerosol3discuss this
[13] ASOHNS_Chinese_approach
[14] sars risk

5. Other potentially aerosol generating procedures[15] did not show statistically significant association with infection, but it would be folly to regard them as safe given the limitations of the evidence.

As the virus is found predominantly in the upper respiratory tract there is now little surprise that clinicians dealing with that area and generating aerosols were among those with high rates of infection in China and Iran[16].

It seems prudent to regard nasendoscopy and any situation where cough or sneeze may be induced as high risk procedures and take appropriate precautions. Guidance to this has been produced by ASOHNS[17]

4. Risk minimization

4.1. Patients

The many guidance articles all focus on reducing the exposure of patients to covid-19. The primary means is to avoid contact with the virus: as medical care areas are hot-spots for sick people and thus potential sites for transmission a major focus has been to avoid face-to-face consultation and avoid hospitalization. Utilization of technology (tele-health is now reimbursed for medical consultations but not yet for allied health[??]) is strongly recommended. Reducing the stay time for patients in medical care areas by scheduling appointments, discouraging early arrival and minimizing attendance of support persons can help.

Scheduling of patients to defer elective procedures is also critical. In the case of a curable but relatively aggressive malignancy like HNSCC it is clear that patients will not be able to wait until the completion of the pandemic for therapy, but the risk of any admission must be weighed in the patients care.

Whilst some jurisdictions have been able to partition hospitals into covid+ and covid- (this has been done to some extent in Italy[18]); in the Australian and New Zealand setting this may become impossible especially as the epidemic evolves. Where possible it would be advantageous to stream patients toward covid- hospitals or treatment centres for predictable admissions and other treatment as long as they possess the expertise to deliver such care.

Many of the guidance articles also consider the risk engendered by some of our treatments. Chemotherapy and large field radiotherapy have definite impacts on host defense, as does the breakdown of mucosal barriers from mucositis from such treatments. There is very limited data to guide us but in crude terms the risk of death in patients in China with cancer was double the general at about 5%. It is thus important to weigh the potential benefit of a therapy and whether the increased risk it proposes from Covid-19 outweighs its benefit.

[15] aerosol4; aerosol5
[16] ENT_infection
[17] ASOHNS
[18] icu_italy

4.2. Ourselves

All members should consider whether they are at increased risk for severe or critical illness with Covid-19. Those at risk need to consider removing themselves from the front lines, for example by use of telehealth.

All members should make themselves familiar with personal protective equipment, indications for use, and how to don and doff it. Given the potential for fomite transmission fanatical adherence to hand hygiene is essential.

As noted above some of our members will be particularly at risk of exposure. Elective examination through fiberoptic endoscopy is a potential aerosol generating procedure. ASOHNS has issued guidelines on this[19] and we recommend members review these as well as the UK guidance for care around tracheostomy[20].

4.3. PPE

All members should make themselves familiar with PPE available, and how to don it and doff it. Doffing is more tricky as it is easy to self-contaminate during the process. There are good descriptions of this in the Zhejian manual[21]. For more visual approaches there are many youtube videos such as the ones from UTMB[22]. WHO maintains the recommendation, in the context of droplet and contact precautions for the use of medical masks for regular care of COVID-19 patients and respirators (N95, FFP2 or FFP3) for circumstances and settings where aerosol generating procedures are performed[23].

5. Reducing face to face consultations

There are several strands to this approach

1. Is a visit necessary? Can it be deferred?
2. Can the visit be done via tele-health
3. How many clinicians need to be involved

5.1. Reviews

We should differentiate on-treatment, early post treatment, and later reviews. Each unit will need to delineate where they think the differences between early and late stand. One view might be to note that for primary non-surgical treatment the ± 3 month evaluation is a central point and use this as a delineating line. Another option is

1. Surgery alone: 6 weeks post-operative

[19] asohns_scope
[20] UK_trache
[21] ASOHNS_Chinese_approach
[22] UTMB video
[23] WHO

2. Radiotherapy (primary or post-operative): 6 weeks post-radiotherapy

3. Chemoradiotherapy (primary or post-operative): 12 weeks post-radiotherapy

On-treatment

On-treatment reviews, particularly for chemoradiotherapy, where the incidence of major toxicity is so frequent are not dispensable. However it may be possible to parcel them out to minimize face-to-face time. For example if the usual approach is for both Radiation and Medical Oncology to see the patient each week, it could be considered for the patient to have a face-to-face review with one speciality and a telehealth review with the other. The face-to-face component could be alternated each week.

Early post-treatment

Restating reviews to document adequacy of treatment done by many units at the three month post (chemo-)radiotherapy mark where fibreoptic examination is essential will need to remain face-to-face. Reviews for supportive care in recovery would seem a good candidate for moving to telehealth.

Later reviews

The key question revolves around the nature of the review: surveillance or late effects and the risk of recurrence.

For risk of recurrence we can consider the following:

1. The majority of failures occur in the first 3 years[24].

2. It is unclear to what extent routine followup has an impact on survival[25].

3. Between 5% and 13% of visits have a suspicion of recurrence. Studies generally agree that the majority of patients with recurrence are symptomatic: between 65 and 80%[26].

4. Symptomatic patients especially those with new onset symptoms[27] have significant risk of having recurrent disease.

5. Turning the question around in how many visits does an asymptomatic patient have a recurrence? Prospective studies have suggested the rate of recurrence in asymptomatic patients to be on the order of 1%[28], 1% [29] or 0.2% of visits[30].

[24] see e.gZatterstom et al, Boysen et al, Kothari et al, Brands et al
[25] Manikantan et al
[26] Agrawal et al, Zatterstom et al, Boysen et al, Kothari et al, Pagh et al
[27] Nisa et al
[28] Agrawal et al
[29] Pagh et al
[30] Kothari et al

It would thus seem reasonable to propose the following:

1. Risk stratify patients by time from diagnosis and risk of recurrence[31].
2. Low risk patients such as those after 3 years who have stable late effects can be deferred
3. All other patients can be considered for initial review by telehealth.
4. Symptomatic patients, especially those with new symptoms require face-to-face evaluation

5.2. Multiple clinicians and visits

It is common in head and neck cancer for the patient to see a number of clinicians as part of their follow-up or evaluation. This will need to be evaluated on a patient by patient basis. Where the purpose of the review is for oncological surveillance it is recommended only one group see the patient. Where the issue is more complex, particularly early post therapy, multiple clinicians are often important for best patient care. However it may be possible to have the majority of these be via telehealth.

5.3. Survivorship visits

As implied by the discussion above each unit should decide where they draw a line in the sand delineating the difference between followup for disease recurrence and followup for long term effects, second primaries and other survivorship issues. There would seem to be a compelling case that patients who are more than 5 years post therapy, or those on very infrequent visits eg 6 monthly or more be deferred until the peak of the pandemic has passed.

6. Multi-disciplinary meetings

As multi-disciplinary care is a cornerstone of head and neck cancer management meetings will need to continue. Consider the following issue: even if distancing using the regulation 4m2 per person if one is in a room with another person for more than 2 hours one is a casual contact. Hence we recommend that meetings be kept short, and a minimum of persons physically attend. Where possible clinicians should dial in: this appears particularly feasible for colleagues in pathology and radiology.

7. Infected patients with cancer

It is as yet unclear how to approach patients who develop Covid-19 on treatment and who have mild disease. There is a small experience from Italy outlined in an interview with

[31] tools to aid this exist such as nomograms Ju et al or online calculators such as Lifemath calculator

Giuseppe Curigliano from the European Institute of Oncology in Milan: their approach appears to be withhold all therapy until the patient is recovered[32]. There is a very small dataset from China[33] (18 of 1590 patients had cancer) which suggests that patients with active malignancy may be at greater risk of developing Covid-19, and that they are significantly more likely to develop severe respiratory complications. Deterioration appears to occur more rapidly than those without cancer (median time to severe events 13 vs 43 days). This was influenced by recent treatment: surgery or chemotherapy in the month prior gave a 5 fold increase in this risk.

7.1. Curative therapy

There are multiple position papers on surgical scheduling. Depending on the phase of the epidemic, urgent and immediate cases (category 1 and urgent category 2) may be able to be operated on. In New York City all elective surgery appears to have been cancelled as the city struggles to cope with over 30 000 cases[34]. In Italy all elective cases are tested for Covid-19 prior to admission[35].

In the context of HNSCC we are well aware of the importance of interruption of radiation, and of the need to minimize the duration of the total treatment package. It is not known how active therapy alters risk of getting severe Covid-19: the epidemiological studies include patients with a history of active cancer in the last 5 years as a risk factor. It is quite possible that trying to complete therapy and avoid the worsened survival from delay might be offset by risk of death from viral infection.

There are two scenarios to consider. Firstly, the patient develops Covid-19 prior to starting therapy. Secondly, they develop infection on therapy. In the first scenario all the clinicians concerned should consider the risk to the patient from a modest delay of 2–3 weeks versus the tempo of their disease. For the second, European colleagues have considered the option of continuing therapy in this situation[36]. If oncologically feasible they favor interruption of therapy and restarting on recovery. They do consider that radical HNSCC therapy should continue in the face of mild infection, but make no specific comment about adjuvant post-operative therapy. They suggest that if possible a specific suite be set aside as a "contaminated" zone for treatment with patients with active Covid. They note the Italian practice that all head and neck cases use surgical face-masks in the department irrespective of their infective status because of the increased possibility of droplet and aerosol production.

From the view of Medical Oncology given the small incremental benefit of chemotherapy and the general view that active infection is a contra-indication to cytotoxic chemotherapy it is most likely that treatment would be stopped. There is some experience with influenza in the neutropenic: viral pneumonia, ventilation and ICU admission were fre-

[32] milan2
[33] Liang et al
[34] US numbers, no elective surgery
[35] milan2
[36] ESTRO

quent[37]. There is no data to guide use of cetuximab: on the positive side it does not cause significant neutropenia, on the negative it does rarely cause lung injury; furthermore for HPV+ HNSCC it is inferior to chemotherapy. It could be considered for specific cases.

7.2. Palliative therapy

There are many resources discussing the radiation and medical oncological approaches to palliative therapy in general. There do not appear to be any special considerations only applicable to our patients.

8. Surgical issues

8.1. ICU utilization

ICU requirements lag behind the general numbers because most patients who deteriorate do so around the 12th day of the illness. Patients with Covid-19 ICU requirements typically spend significantly longer in ICU than do other cases (median stay ~7 days)[38]. Given the number of cases ICU requirements can be extremely high. Units will need to consider the availability of ICU resources in planning cases. Wherever possible avoidance of ICU stay is preferable.

8.2. Covid-19 pre-operative testing

This is done routinely in Italy[39]. It would seem prudent to adopt this if resources allow. At present this is not an indicated use of screening in Australia.

8.3. UADT vs other

It is self-evident the risk for cases in the upper aero-digestive tract is highest. Other cases propose little risk from the surgery per se but there is still the risk associated with aerosol and droplet generation from intubation.

8.4. Known Covid+ cases

It would seem prudent to defer surgery. It is clear that patients may be quite well but deteriorate quickly, and be minimally distressed despite significant hypoxemia. It is not known what the impact of general anesthesia is on the course of the illness. As some of the pathophysiology appears related to atelectasis, and that cardiac issues are not infrequent[40] it is possible that surgery will have a substantial impact on progress or make it more likely that mild cases can become severely ill.

[37] febrile neutropenia
[38] Zhou et al
[39] milan2
[40] Internet Book of Critical Care

9. Other resources

9.1. Experiences from the frontline

Is your department ready for Covid-19? A discussion for interventional radiology but relevant to any interventional group interventional radiology

Experiences in Radiation Oncology during SARS radiotherapy

Discussion with Italian Medical oncologists medscape_interview milan1 milan2 (this is a followup a week later as numbers went from 10000 to 40000 cases)

9.2. Limiting Movement of health care workers

Many of us work across several sites: private, public or a mix. This guidance from Singapore is pertinent. HCW_movement

9.3. Surgery

British Association of Head and Neck Oncologists BAHNO

ASOHNS ASOHNS

American Academy of Otolaryngology Head and Neck Surgery AAOHNS

Australian Association of Maxillofacial Surgery ANZAOMS

Australian Society of Anaesthetists anesthetists

Nasendoscopy ASOHNS

9.4. Radiation oncology

RANZCR RANZCR

ESTRO ESTRO

Lessons from disruption to therapy from Hurricane Maria in Puerto Rico Hurricane

9.5. Medical oncology

ASCO ASCO

ESMO ESMO

Australian approach moga

9.6. Allied health

Speech pathology sp_path

Physiotherapy physio

Nursing Nursing Board

Dietitians could not find anything that was not behind a paywall.

9.7. Patient resources

Cancer Council patients

9.8. General information

WHO WHO

WHO courses courses

Course of illness and general approach Wuhan advice

Critical care Internet Book of Critical Care

9.9. How tos for video consultations

General Guide video

NZ guide Telehealth NZ. There is a discussion of what can be expected for levels of connectivity network impact

Oxford: aimed at primary care primary

Cornell cornell

UK physiotherapy physio