12 July 2019

Susan Daskalakis
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Dear Ms Daskalakis

RE: Review of Therapeutic Guidelines: Respiratory

The Society of Hospital Pharmacists of Australia (SHPA) is the national, professional, for-purpose organisation for leading pharmacists and pharmacy technicians working across Australia's health system, advocating for their pivotal role improving the safety and quality of medicines use. Embedded in multidisciplinary medical teams and equipped with exceptional medicines management expertise, SHPA members are progressive advocates for clinical excellence, committed to evidence-based practice and passionate about patient care.

SHPA thanks the Therapeutic Guidelines Limited (TGL) for giving the opportunity to provide comments regarding Therapeutic Guidelines: Respiratory, ahead of its revision for the next edition. This guideline is an essential reference for our members who work in respiratory units, any inpatient, outpatient, ambulatory or primary care settings where patients of any age with respiratory conditions, receive pharmacy services. SHPA convenes a Respiratory Specialty Practice stream, with approximately 532 members, and its members have raised issues and considerations in the current version of *Therapeutic Guidelines: Respiratory* for the Editorial Board to review ahead of the next version.

Respiratory symptoms occurring in children

SHPA recommends the inclusion of high flow nasal prong (HFNP) oxygen therapy into treatment options. Certain health services across Australia have established guidelines on the appropriate use of HFNP and these can be used as an outline of what is to be included in the Respiratory Guidelines. Current guidelines used across Australia include:

- The Royal Children's Hospital Melbourne Clinical Guidelines (Nursing): High flow nasal prong (HFNP) therapy
- NSW Health: Humidified High Flow Nasal Cannula Oxygen Guideline for Metropolitan Paediatric Wards and EDs

Asthma in children

SHPA has endorsed the fully revised Australian Asthma Handbook Version 2. The updated version has a section on '*Managing asthma in children'* which has been updated on March 2019. The Editorial Board should align this section of the Respiratory Guidelines with the corresponding sections in the Australian Asthma Handbook Version 2.

Cystic fibrosis

Overview of cystic fibrosis

- The opening paragraph of this section briefly mentions the several classes of cystic fibrosis gene mutation. SHPA believes supplementary information should be provided on the classes such as details on the number and type of class mutations that occur as cystic fibrosis transmembrane conductance regulator (CFTR) modulator therapy is dependant on the class.
- SHPA notes that the section comments on 'Chronic infection with mucoid P. aeruginosa or B. cepacia complex is associated with increased morbidity and mortality'. There should be a mention of the effect of chronic Stenotrophomonas maltophilia infection on the mortality of cystic fibrosis patients as research has highlighted that baseline chronic Stenotrophomonas maltophilia infection is associated with a three-fold increased risk of death or a lung transplant in cystic fibrosis patients, even higher than that seen with B. cepacia complex infection[1].
- SHPA suggests removing the word *Potentially* in the following bullet point:
    - ~~*"Potentially,*~~ *correction of cystic fibrosis transmembrane conductance regulator (CFTR) protein function in patients with particular mutations of the CF gene, using drugs such as ivacaftor."*
- The guidance on antibiotics and dosing is limited in the section as there is a single statement that states, ' For all antibiotic therapy, the choice, dose and duration must be decided in consultation with the specialist CF centre'. Guidance would be beneficial especially for smaller centres who may be caring for cystic fibrosis patients, even if there is a caveat that this may differ for centres e.g. tobramycin, ceftazidime, meropenem dosing for IV administration.

Antibiotic therapy

- The following inclusion should be made in the sentence, '*a course of intravenous antibiotic treatment is given, either as an inpatient**,** by an outpatient parenteral antimicrobial therapy program* **or by a Hospital in the Home (HITH) based services in cystic fibrosis'**, as HITH services can also change the administration of medicines.
- SHPA suggests additional information on inhaled antibiotics and regimens as the current information in the guidelines is limited. This is primarily on the eradication with inhaled tobramycin studies[2]. This also applies to the section "Initial infection with *Pseudomonas aeruginosa"* which is outdated and should be replaced as current evidence highlights there is no benefit using oral ciprofloxacin[3].
- In the following statement, SHPA recommends changing cephalosporin to beta-lactam, *'Treatment may involve a 2-week course of intravenous antibiotics, most commonly a combination of an antipseudomonal penicillin or cephalosporin'.*
- To ensure terminology is consistent under the section **Chronic *Pseudomonas aeruginosa* infection, the section should only either use** a month on/month off to describe the regimen or a continuous/alternating regimen, as using both may be contradictory and confusing for readers.
- Under the section, **Other respiratory pathogens** additional information on Steno eradication and suppression should be included.

Chest physiotherapy for cystic fibrosis

SHPA would welcome advice on medication administration timing (i.e. antibiotics, dornase and mucolytics) in relation to cystic fibrosis patients receiving chest physiotherapy.

Aerosolised mucolytics for cystic fibrosis

- Additional information on pediatric use of dornase alfa should be included in the guidelines as this is currently limited.
- The section on Mannitol mentions the need for patients to undergo a Mannitol Tolerance Test. SHPA recommends that the guide should state that all patients should undergo a tolerance test for hypertonic saline before it is prescribed.

Inclusion of medicine dosages

SHPA suggests dosing of the following medicines to be included in the guidelines:

- Azithromycin, including when used in children <6 years of age
- Lumacaftor
- Tezafaftor
- Steroid dosing for allergic bronchopulmonary aspergillosis (ABPA) with mention of duration, the requirement for slow weaning and mentioning of drug interaction between azoles and CFTR modulators
- Ursodeoxycholic acid, with mention of changing gastrointestinal aspects with CFTR modulation, such as the instance of the reduced requirement for Pancreatic enzyme replacement therapy (PERT)

Key references

The Cystic Fibrosis Standards Of Care, Australia is being updated in 2019 hence the reference list should be updated accordingly if it is published prior to the Respiratory guidelines. Additionally, the Australian Cystic Fibrosis Data Registry (ACFDR) should be updated to the latest 2017 report[4].

Additional sections to be included

SHPA recommends the inclusion of a section on renal impairment secondary to medications and the requirement and guidelines for dose reduction in such settings. It is imperative to mention in the section that cystic fibrosis patients have increased rates of acute kidney injury and increasing prevalence of chronic kidney disease.

Inclusion of additional resources

SHPA recommends the inclusion of the Queensland Paediatric Emergency Guidelines as an additional resource to the Respiratory Guidelines. These guidelines outline the current recommendations for the care and management of children presenting to an Emergency Department (ED) in Queensland. The relevant guidelines that should be included in the Respiratory Guidelines are as follows:

- Asthma – Emergency management in children
- Bronchiolitis – Emergency management in children
- Croup – Emergency management in children
- Pre-school Wheeze – Emergency management in children

If you have any queries or would like to discuss our submission further, please do not hesitate to contact Johanna de Wever, General Manager, Advocacy and Leadership on jdewever@shpa.org.au.

Yours sincerely,

Kristin Michaels
Chief Executive

References

[1] Waters, V., Atenafu, E. G., Lu, A., Yau, Y., et al. (2013). 'Chronic Stenotrophomonas Maltophilia Infection and Mortality or Lung Transplantation in Cystic Fibrosis Patients'. *Journal of Cystic Fibrosis.* 12. 482-86.

[2] Vázquez-Espinosa, E., Girón, R. M., Gómez-Punter, R. M., García-Castillo, E., Valenzuela, C., Cisneros, C., Ancochea, J. (2015). Long-term safety and efficacy of tobramycin in the management of cystic fibrosis. *Therapeutics and clinical risk management*, *11*, 407–415. doi:10.2147/TCRM.S75208

[3] Claude, F., Rochat, I., and Hafen, G. M. (2019). 'No Benefit of Longer Eradication Therapy of Pseudomonas Aeruginosa Primoinfections in Pediatric Cystic Fibrosis'. *BMC Research Notes.* 12. 115.

[4] Ruseckaite, R., Ahern, S., Ranger, T., Dean, J., Gardam, M., Bell, S., Burke, N. on behalf of the Australian Cystic Fibrosis Data Registry. (2019). The Australian Cystic Fibrosis Data Registry Annual Report, 2017. Monash University, Department of Epidemiology and Preventive Medicine, March 2019, Report No 20.