COPD-X Summary of Changes V2.53, March 2018

The latest update of The COPD-X Plan: Australian and New Zealand Guidelines for the Management of COPD has been provided by Lung Foundation Australia in conjunction with the Thoracic Society of Australia and New Zealand following the March 2018 meeting of the COPD-X Guidelines Committee.

Implications for Clinical Practice

All changes made to the document are outlined below and those highlighted in yellow are differentiated as the most significant and likely to have an impact on clinical practice.

Support for COPD-X

This is a new section which builds on a previously included statement about the ongoing logistical and financial support of the COPD-X Guidelines (COPD-X). Although Lung Foundation Australia's national COPD program which oversees COPD-X receives sponsorship funding from a number of industry partners, industry has no direct or indirect influence over the content. Lung Foundation Australia has complete editorial and design control over the content of COPD-X, as well as all other resources, promotions and educational programs.

C. Confirm diagnosis and assess severity

C2.3 Spirometry

Inclusion of wording from a 2018 Australian study stating that case finding and effective use of spirometry could improve the diagnosis of COPD in primary care (Liang 2018). Of 1,050 smokers or ex-smokers identified from 41 Melbourne general practices, two-thirds were current smokers. More than one-third of participants with a prior diagnosis of COPD did not meet the spirometric definition of the disorder. 1 in 6 participants not previously diagnosed with COPD had spirometry test results consistent with COPD.

Inclusion of wording from a study by Aaron et al (Aaron 2017) which suggests considerable variability of spirometry results around the FEV_1/FVC threshold and that a single spirometric assessment may not be reliable for diagnosing COPD in patients with mild to moderate airflow obstruction. The study looked at two longitudinal cohorts of subjects with mild to moderate COPD on post-bronchodilator spirometry at baseline and found that transient episodes of diagnostic instability occurred commonly and that 12 to 27% of subjects reversed their diagnosis of COPD over a 4 to 5 year period. Diagnostic reversal was most common for subjects who quit smoking during the study period. It is concluded that if spirometry results are around the threshold, repeat spirometry should be performed to confirm diagnosis.

O. Optimise Function

O1.2.1 Long-acting muscarinic antagonists (LAMA)

Following the rewrite of this section in the previous version of COPD-X, further wording on the effectiveness of tiotropium compared with placebo has been added from a 2017 study (Zhou 2017). In a 2 year RCT of 841 COPD patients with post-bronchodilator FEV_1 ≥50% predicted, tiotropium resulted in a significantly higher FEV_1 and reduced annual decline in post-bronchodilator FEV_1 compared to placebo [evidence level II]. However, there was a high withdrawal rate and 40% were current smokers.

A meta-analysis of 9 studies of LAMA vs. LABA inhalers (17,120 COPD patients, with tiotropium as the most common LAMA) showed that LAMAs reduced exacerbation rates and exacerbation-related hospitalisations, compared to LABAs (Maia 2017) [evidence level I].

O1.2.3 Long-acting bronchodilator combinations (LAMA/LABA)

Minor revision made to the wording about the benefits of a once daily tiotropium/olodaterol combination. The wording now includes reference to significant improvements in breathlessness, in addition to significantly improved lung function and quality of life, compared to tiotropium or olodaterol (Miravitlles 2017) [evidence level I].

Addition of a new paragraph discussing a LAMA/LABA fixed dose combination (glycopyrrolate/formoterol fumarate) administered twice daily by Co-Suspension™ Delivery Technology MDI which had a similar safety and efficacy to that of its individual monocomponent MDIs in patients with moderate-to-very severe COPD (Hanania 2017). It is postulated that a LAMA/LABA fixed dose combination MDI could be an option for patients with significant lung function impairment who are unable to generate adequate inspiratory flow through higher resistance devices.

O6.3 Inspiratory Muscle Training

Addition of new wording and two 2018 references stating that although IMT used in isolation is beneficial, it does not appear to have any added benefits in terms of dyspnoea, functional exercise capacity or quality of life when combined with whole body exercise training in people with COPD (Beaumont 2018, Schultz 2018) [evidence level II].

O6.10 Nutrition

Malnutrition: Inclusion of a new sentence and reference stating that COPD patients with undernutrition are most likely to benefit from nutrition therapy before an undernutrition state is established. (Akner 2016).

O7.6 Aspiration

Review and revision of section and inclusion of additional supporting references (Good-Fratturelli 2000, Zheng 2016, Regan 2017, Ghannouchi 2016, McKinstry 2010).

P: Prevent deterioration

P1.2 Treatment of nicotine dependence

Addition of a paragraph discussing a 2018 Australian study of 690 current smokers identified from Melbourne general practices (Liang 2018), of whom 52.2% self-reported attempts to quit at least once during the previous 12 months. The pharmacological treatments most frequently tried were nicotine replacement therapy and varenicline. However, non-evidence-based treatments such as hypnotherapy and electronic cigarettes were also frequently tried.

P1.2.5 Electronic cigarettes (e-cigarettes)

Addition of a paragraph discussing the rise in prevalence of e-cigarette use. An observational study of more than 4,500 current or former smokers aged 45 to 80 years (at least 10 pack years) found that starting around 2010, there has been a rapid rise in the prevalence of e-cigarette use among older adults with, or at risk for COPD (Bowler 2017). Subjects with mild, moderate, and severe COPD were just as likely to try and continue to use e-cigarettes as those without COPD. E-cigarette users had a heavier conventional cigarette smoking history and worse respiratory health, were less likely to reduce or quit conventional cigarette smoking, had higher nicotine dependence, and were more likely to report chronic bronchitis and exacerbations.

Addition of a sentence stating that evidence on the safety and efficacy of e-cigarettes is still emerging (Hartmann-Boyce 2016). Until long-term safety and efficacy is established, e-cigarettes cannot be recommended as a harm minimisation strategy among smokers with or at risk of COPD.

P12 Alpha1-antitrypsin deficiency

Addition of wording from a study by Stockley (Stockley 2016) discussing rates of annual decline of FEV_1 and gas transfer in a single centre UK cohort of 482 untreated individuals with PiZZ. The rates of decline were highly variable at all stages of COPD severity, ranging from no decline to rapid decline in both never smokers and former smokers.

D: Develop a plan of care

D1.8 Speech pathologist

Review and revision of section, including discussion of the management of dysphagia (difficulty swallowing) in individuals with COPD and inclusion of additional supporting references (Kobayashi 2007, Schermer 2006, Gross 2009, Terada 2010).

D4. Telehealth

Addition of a paragraph discussing telerehabilitation. In an Australian study of telerehabilitation comparing 8 weeks of group exercise training thrice weekly with up to four remote participants, the endurance shuttle walk test improved significantly in the trained group compared with usual care. However there were no significant differences in quality of life or physical activity measured as steps walked per day between the two groups (Tsai 2017) [evidence level II].

Addition of a paragraph discussing a program of integrated care for patients with COPD and multiple comorbidities. In a randomised controlled trial, 470 COPD patients with at least 2 comorbidities were recruited from a metropolitan and a rural centre. The intervention comprised a combination of telephone consults, action plans, and other components and was found to have no effect on the number of emergency department visits and hospital admissions; however, mortality was reduced (Rose 2018) [evidence level II].

D5. Treat anxiety and depression

Addition of a new paragraph discussing the benefits of cognitive behaviour therapy (CBT). In a trial of 28 patients undergoing pulmonary rehabilitation with a three month follow up, CBT showed a short term improvement in fatigue, stress and depression and anxiety scores. However, as the follow up was short, it is unknown if the benefits were sustained (Luk 2017).

X: Manage eXacerbations

X2.2.3 Antibiotics for treatment of exacerbations

Addition of wording discussing hospital procalcitonin testing and the effect on antibiotic treatment of patients admitted for a COPD exacerbation. Despite promising data from multiple clinical trials, cross-sectional and longitudinal analysis of over 200,000 COPD admissions from 505 US hospitals did not show a change in antibiotic prescribing rates or duration of use in hospitals that had begun using procalcitonin testing (Lindenauer 2017). The authors conclude that further implementation research is required.

Inclusion of a 2017 reference by Brownridge (Brownridge 2017) (an Australian retrospective case series of hospitalised COPD patients) which adds to the evidence from the previously cited Australian retrospective case series of hospitalised COPD patients (Fanning 2014). Both studies found that antibiotic treatment was guideline concordant in less than 15% of cases. This was due to over-use of intravenous antibiotics and prescription of dual antibiotics.

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