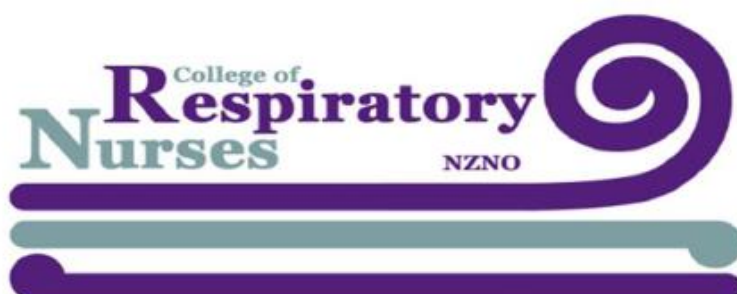


AIRWAYS



*Hongihongi te rangi hou'
'Smell the fresh air'*

Newsletter of the
College of Respiratory Nurses (NZNO)

July 2018

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Note from the Chairperson

KIA ORA KOUTOU

Welcome to the winter edition of Airways 2018. This is the first edition with our new editors Carol George and Marilyn Dyer, who have taken on this role with much enthusiasm and energy. We can all look forward to the continuation of interesting, thought-provoking and celebratory articles in Airways, along with the high level of professionalism. Carol and Marilyn are a great team!

The committee continues to work hard and has had an extremely busy few months, with the highlight during this time being our biennial symposium held in Wellington on Friday 13 April: 'Taking Respiratory Care Beyond the Rhetoric – Less Talk, More Action'.

Committee member Carol George, along with Dawn Acker, Teresa Chaleki, Abbey Kingston-Burke and Jill West worked extremely hard to bring us a very professional Symposium, with key note speaker Dr Lance O'Sullivan, and other outstanding speakers. Evaluations of the day were generally extremely positive, and I would like to pay tribute to the organising committee for achieving such a successful symposium. A brief report is included in this edition.

The committee met on the evening before the Symposium and during the lunch hour of the Symposium we held our Annual General Meeting. The College's financial situation remains positive, and the transition to centralised payment processing is on-track. The College has received 50 consultation requests in the past year with fourteen being relevant, and ultimately submissions on seven consultations were undertaken. The College continues to regularly update the website. Following a survey to members on SNIIPS, and the outcome supported the continuation of this service. College membership currently stands at 282, and has been increasing on average by 9% annually. Members were reminded that at the 2017 NZNO AGM a remit was passed that nurses can now belong to three colleges/sections, as opposed to two.

This edition of Airways has turned its focus to Obstructive Sleep Apnoea, which is certainly becoming recognised as an increasing concern, and often under-diagnosed in Aotearoa. The Thoracic Society of Australia and New Zealand estimates obstructive sleep apnoea may affect approximately 16,000 adults and 2% of children in Aotearoa. The cost to the taxpayer is estimated to be around \$40 million per year. This figure may include sequelae such as increased risk of accidents, hypertension, cardiovascular disease, respiratory failure, diabetes, along with medical costs and loss of production. Articles in this edition are certainly worth our attention.

The College has written again to the Minister of Health Dr David Clark again outlining our concerns around respiratory disease in Aotearoa. Dr Clarke responded that the "Ministry of Health focuses on system level changes to address all long term conditions, rather than disease-specific programmes". This includes Healthy Homes Guarantee Bill and Healthy Families NZ, along with Smoke free 2025, WellChild programmes, and Reducing Childhood Obesity. The College remains committed to keeping a national focus on respiratory disease and will keep this on the agenda during the coming year.

During the AGM the issue of generic inhalers was raised from the floor, and a discussion resulted with the recommendation to complete a CARM report if there is a situation where inhalers are being mixed. An email regarding this has been sent to members.

Michelle Hopley was thanked and presented a certificate for her outstanding time, energy and professionalism she gave over the four years on the Committee. Thank you again Michelle, and we will certainly miss you.

The College committee looks forward to the challenges over the next few months. I would like to welcome Nicola Corna from Auckland, and thank other members who are continuing: Laura Campbell, Sharon Hancock, Marilyn Dyer, Mary Cox, Carol George and Dawn Acker. Annie Bradley-Ingle, PNA continues to offer her support and guidance.

Although our College is small, we remain committed to providing a strong voice for all those working in respiratory health as a way to reduce the very tragic statistics around respiratory disease in Aotearoa . To that end please encourage colleagues to join our College; the more members we have the greater our voice.

If you would like to make a difference at a national level, consider joining the committee! Any of our current committee members would gladly answer any queries you may have and contact details are included in this edition and on the website.

On behalf of the committee, thank you all for your commitment and support with the College. We encourage feedback and welcome all thoughts and comments, so that we can accurately provide representation for all our members. Please see the website for contact details.

I would also like to extend my huge thanks to the committee: I look forward to meeting and working with you over the following months. Your support, enthusiasm, professionalism and commitment is humbling.

The winter months can be very challenging and taxing on staff and resources. Keep well and try and take time for yourselves.

Hongihongi te rangi hou
'Smell the fresh air'

Mary Gluyas
Chair
College of Respiratory Nurses NZNO

Editors Note

Thanks for your patience as Marilyn and I prepare the July 2018 edition of Airways Newsletter. As new editors, we look forward to your participation and feedback. What would you like in your Airways newsletter?

We have started with the theme of Obstructive Sleep Apnoea (OSA). OSA has many health implications and I for one want to know more about the what, where, why and how of OSA management in New Zealand. A big thank you to the contributors of this edition.

For the next quarter we are looking at Bronchiectasis and we would love to read about your experiences nursing (or living with) Bronchiectasis. We look forward to reading about your practice and knowledge as we move forward.

Kia Kaha; Carol George and Marilyn Dyer

Burden of Obstructive Sleep Apnoea in New Zealand.

Obstructive Sleep Apnoea (OSA) is characterised by apnoea episodes and hypopneas. In adults, OSA occurs with repetitive collapse of the upper airway during sleep. However, untreated OSA may contribute adverse clinical outcomes, including excessive daytime sleepiness, impaired function, metabolic dysfunction and an increased risk of cardiovascular disease and mortality (Kryger and Malhotra, 2018). In New Zealand, the incidence and burden of OSA has been outlined in the National Respiratory Strategy, noting that OSA is:

- * A common childhood respiratory condition 3- 5% children
- * Has an Incidence of 4% male 2% female
- * Rates are higher in Māori & Pacific people.
- * Twice as common in Māori males than non-Māori with more comorbidities. *

A contributor to overall health loss and risk.

(2015, Asthma and Respiratory Foundation of New (2015, Asthma and Respiratory Foundation of New Zealand).

OSA is a disorder that often goes unrecognized, which can have a significant health impact for people. Untreated OSA has been associated with hypertension; atrial fibrillation; stroke; diabetes and congestive heart failure. Presenting as comorbidities that have quality and life limiting potential. In NZ, this is reflected in inequitable outcomes amongst our Māori and Pacific people, particularly of note Māori men (2015, Asthma and Respiratory Foundation of New Zealand).



Once OSA is diagnosed, implementation of management strategies can reduce the burden associated with OSA. As respiratory nurses we can be proactive in identifying and supporting the care of people who are at risk for OSA.

The risk profile for OSA, according to Best Practice Journal NZ, includes obesity, smoking, alcohol use, hypothyroidism and females with polycystic ovary syndrome (bpac, 2012). Furthermore, they add that 40 – 90 % people with OSA have obesity issues with 1 kg/m² increase in BMI resulting in a 30% risk of sleep apnoea in four years (bpac, 2012).

Additional risk factors include male gender; craniofacial and upper airway abnormalities (Strohl, 2018) and medical conditions such as asthma, diabetes and stroke. Risk factors and symptoms can direct us to consider OSA as a health issue for people. Moreover, people with OSA may report; snoring; morning headaches; mood problems and increased daytime sleepiness (Asthma and Respiratory Foundation of New Zealand, 2015).

Goals for management of people with OSA include resolving signs and symptoms of OSA; improving sleep; normalising apnoea/ hypopnoea index and normalising oxyhaemoglobin saturations (Kryger and Malhotra, 2018). For adults with mild OSA diet and exercise are an important management strategy including weight loss when BMI elevated. Kryger and Malhotra (2018), write that although there is no consensus, all people with OSA should be offered positive pressure devices, such as CPAP. In New Zealand strategies will include life style measures; oral airway devices, positive airway pressure and surgical options. In addition, the Asthma and Respiratory Foundation of New Zealand note in the strategy that for children removing tonsils and adenoids can be effective (2015).

Untreated OSA has significant health associations and burden of disease in NZ. As nurses we can reduce the impact of OSA by identifying at risk people and directing their care as appropriate to a sleep team.

Carol George NP
Horowhenua Community Practice

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College of Respiratory Nurses NZNO Symposium 2018

Taking Respiratory Care Beyond the Rhetoric - Less Talk More Action

The 2018 Respiratory College Symposium, held in Wellington, was well attended with over 100 people including attendees, speakers, exhibitors and committee members participating. Notably, Grant Brooke's President NZNO, reported that the symposium addressed equity and inequality issues through the variety of speakers.

From my point of view, each speaker brought an aspect of respiratory care that considered new paradigms for managing people with respiratory disease.

Key points included the need to consider telehealth for the future; the necessity of nurses for long term conditions; the value of thinking beyond the medical model; partnership, exercise; warm dry affordable housing and moving forward with evidence based practice.

It was a great symposium and I would like to thank everyone who took part. Also to add that Symposium 2020 is underway and we are excited about preparations for this so look out for NZNO College Respiratory Nurses Symposium 2020!

Carol George NP

Horowhenua Community Practice



Sleep Apnoea, what's it all about?

Obstructive sleep apnoea (OSA) is a common cause of sleep disruption that can have detrimental impact on everyday life. OSA is defined as repetitive breathing pauses that interrupt the sleep architecture due to upper airway collapse. It may be anatomical in nature, i.e. due to excessive tonsillar tissue, shorten jaw or narrowing of the airway due to excessive adipose tissue, or in many cases a combination of factors. An apnoea is defined as a cessation of breathing for a minimum of 10 seconds. Severity is measured via the apnoea-hypopnoea index (AHI) or oxygen desaturation index (ODI) with <5 normal, 5-15 mild, 15-30 moderate, >30 severe, events per sleep hour.

OSA is linked to hypertension, neuro-cognitive issues causing risk of injury via accidents and injury due to cognitive dysfunction. Severe OSA predisposes coronary artery disease, stroke and increased mortality. The effects of sleep apnoea on partners is also an important factor, with reduced sleep quality often experienced by both for different factors. It is not uncommon for OSA sufferers to be unaware of the night time effects of sleep apnoea. The impact of poor sleep and ability to make judgements can make presentation of issues challenging. Relationship stressors may strain and often presentation occurs when concern or frustration mount within the family unit.

Common Presentation

- Unrefreshing sleep
- Partner prompting referral
- Elevated BMI
- Insomnia
- Resistant hypertension
- Loud snoring
- Erectile dysfunction
- Complaints of fatigue and loss of energy
- Retrognathia

Atypical presentation

- Thin menopausal/post-menopausal women
- Absence of snoring

Investigation

- Subjective sleepiness
- Cardiovascular history and risk factors
- Driving risk
- Impact of memory, mood and motivation

Red Flags

- Driving risk noted
- Occupational risk – High risk profession

Differential diagnosis

- Insomnia
- Obesity hypoventilation syndrome
- Sedating medications
- Lifestyle factors
- Other medical causes (endocrine, neurological, chronic medical conditions)
- Mental health factors (depression, anxiety)
- Restless legs syndrome

Examination

Thorough upper airway examination of nose and throat. Check for signs of pulmonary hypertension (oedema, elevated JVP), blood pressure, BMI, sleep study.

Diagnosis

Clinical history together with positive sleep study will provide evidence for diagnosis. It may be that the clinical history alone is enough to warrant further investigations if the clinical suspicion for OSA is present alongside a negative screening study. Cyclical pattern of oxygen desaturation with an ODI > 5 indicates a degree of sleep apnoea. With mild OSA 5-15, moderate 15-30 and severe > 30 events per sleep hour.

Treatment

Multi-pronged approach is usually recommended. Lifestyle modification working on weight loss and increasing exercise. Modification of stimulants such as alcohol, caffeine and nicotine would improve sleep quality. Ensuring other medical conditions are optimised such as therapeutic HbA1c, thyroid function and iron levels are checked. Optimising good sleep habits, ensuring regular adequate hours for sleep. More difficult for shift workers to adapt. Education re causes and treatment of OSA identifying individual's need, development of goals to work towards. CPAP is the gold standard treatment, although it is not so easily tolerated by some. Phenotyping of patients with sleep apnoea may be useful in adjunct therapy, particularly for those intolerant of CPAP with other treatment modalities to be considered. Mandibular splints may be useful for those with retrognathia and positional influences to sleep apnoea should always be considered i.e sleeping on ones back will increase the severity of sleep apnoea as gravity will aid length of apnoea. These devices rely on good dentition and ability to tolerate splint during sleep, they should be made for the patient by an authorised dental practitioner. Understanding the factors of why PAP therapy can fail and in particular reflecting on the patient phenotype may be an important factor in resolving the issue. Whilst in some cases, this may be due to psychological factors, it is also understood that physiological factors can also be identified. Such cause of flow resistance and upper airway collapsibility, changes in loop gain, arousal threshold need to be worked through in finding a treatment modality that is suitable.

Funding of PAP therapy can be severity dependant i.e. meeting the threshold for publically funded treatment can be problematic. It may be that the severity of disease does not meet funding threshold, which then opens up the debate of if privately funded treatment would be beneficial. Assessing if the treatment has improved the baseline symptoms would be paramount, a good subjective improvement to baseline is evidence that treatment is working. Resolution of sleep fragmentation/deprivation would be expected to occur in a matter of days once treatment optimised i.e. time to feel improvement occurs quickly.

NZTA guidelines

Occupational risk would include driving as a main component of the occupation and if sleepiness when behind the wheel has been identified as a real or potential problem, it would be crucial to assess risk as per NZTA guidelines. We would strongly advise that you discuss these issues with them in accordance with the NZTA Guidelines for Fitness to drive (<https://www.nzta.govt.nz/resources/medical-aspects/>).

Sally Powell

Clinical Nurse Specialist Sleep

Christchurch Hospital

Synopsis of Respiratory Research: OSA and CVD Systematic Review

28th May 2018

Wang, X., Zhang, Y., Dong, Z. Fan, J., Nie S. and Wei, Y. (2018). Effect of continuous positive airway pressure on long-term cardiovascular outcomes in patients with coronary artery disease and obstructive sleep apnea: a systematic review and meta-analysis. Retrieved <https://respiratory-research.biomedcentral.com/articles/10.1186/s12931-018-0761-8>

Title:

Effect of continuous positive airway pressure on long-term cardiovascular outcomes in patients with coronary artery disease and obstructive sleep apnoea: a systematic review and meta-analysis.

Authors: Xiao Wang, Ying Zhang, Zhimin, Jingyao Fan, Shaoping Nie and Yongxiang Wei

Background:

Obstructive sleep apnoea (OSA) is highly prevalent in patients with cardiovascular diseases. Compared to the general population, OSA is more common in patients with coronary artery disease (CAD), with a reported prevalence of 38% to 65% [1]. Continuous positive airway pressure (CPAP) is recommended for symptomatic patients with OSA, but multiple observational studies [2-8] and randomized controlled trials (RCTs) [4,5] have shown inconsistent results of CPAC therapy in reducing cardiovascular events in patients with established CAD.

A systematic review and meta-analysis was conducted to assess whether adding CPAP therapy would improve long-term cardiovascular outcomes in patients with CAD and OSA.

Methods:

This meta-analysis was conducted in accordance to the Preferred Reporting Items for Systematic Review and the Meta-analysis (PRISMA) statement [11]. The searches included the PubMed, EMBASE, and Cochrane library.

Study selection and eligibility criteria: Two authors assessed the eligibility of articles by initially screening the titles and abstracts. Articles that reported the impact of CPAP versus standard therapy (control group) among patients with OSA and CAD were considered for inclusion.

Data synthesis and analysis: Multivariable-adjusted hazard ratio (HR) or risk ratio (RR) were collected from the original studies. The Cochran Q test and *I*² statistic to assess heterogeneity across studies with a significant level of $p < 0.10$. A 2-sided p value < 0.05 was deemed significant.

The primary outcome of interest was major adverse cardiovascular events (MACE), defined as a composite of all-cause or cardiovascular death, Myocardial infarction (MI), stroke repeat revascularisation, or hospitalisation for heart failure.

Results

The literature search yielded 1452 citations of which 21 were retained for full-text review. Of those, 12 studies were excluded because they did not specify patients with CAD, did not report on outcomes of interest and has less than 1-year follow-up. 9 studies in total were included in the meta-analysis. Of these 9 studies, 7 were observational and 2 were RCTs [[2-10].

Discussion

The associations of CPAP use with risk reduction of composite cardiovascular events, all-cause and cardiovascular death in patients with concomitant CAD and OSA were only demonstrated in the observational studies, but not the RCTs. There were no significant associations between CPAP treatment with individual cardiovascular outcomes.

Based on these results there is still no clear evidence to prescribe CPAP with the purpose of preventing future cardiovascular events in patients with OSA and established CAD.

OSA was linked to a series of cardiovascular risk factors and outcomes. CPAP is effective in reversing upper airway obstruction and hypoxemia. Trials evaluating MACE, no significant beneficial effects of CPAP were shown in patients with OSA [10, 16, 17].

Findings suggested adding CPAP as a secondary prevention for patients with CAD and concomitant OSA, might be beneficial in the long-term follow-up, as shown in observational studies, but not verified in RCTs.

Conclusions

Compared to standard therapy alone, the use of CPAP in patients with OSA and concomitant CAD was associated with a reduced risk of major cardiovascular events, all -cause and cardiovascular mortality. This was only observed in the observational studies and not in the RCTs. There is a need for large-scale RCTs to further explore the value of CPAP therapy as a second prevention in a high risk and homogenous CAD population

Synopsis provided by:

Marilyn Dyer

Respiratory Nurse Specialist

Respiratory Support Services

Te Tai Tokerau PHO



Respiratory Sleep Resources:

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The Epworth Sleepiness Scale is a validated sleepiness scale that can assist with the identification of potential sleep problems, including OSA. This easy to administer self-assessment tool can be part of a nursing assessment.

Situation	0	1	2	3
Sitting and Reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Watching TV	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sitting Inactive in a Public Place (eg. theatre or meeting)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As A Passenger in a Car for an Hour Without a Break	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lying Down to Rest in the Afternoon When Circumstances Permit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sitting and Talking to Someone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sitting Quietly After Lunch without Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In a Car, While Stopped for a Few Minutes in Traffic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How to Score

0: Would never doze. 1: Slight chance of dozing. 2: Moderate chance of dozing. 3: High chance of dozing.

SAANZ write that a score of 12 or above indicates excessive daytime sleepiness and should be followed up with the patient's primary practitioner.

For further information refer to: The Sleep Apnoea Association of NZ (2018). *SAANZ Test: Epworth Sleepiness Scale*. Retrieved http://www.sleepapnoeanz.org.nz/the_epworth_sleepiness_scale.shtml

NZNO RESPIRATORY COLLEGE COMMITTEE

Name	Committee Role	Address	Email Address
Mary Gluyas	Chairperson	Ashburton	mary.gluyas@cdhb.health.nz
Sharon Hancock	Treasurer	Palmerston North	sharon.hancock@midcentraldhb.govt.nz
Laura Campbell	Secretary	Auckland 0629	lcampbell@comprehensivecare.co.nz
Mary Cox	Committee Member	Kawakawa	mary@hauorawhanui.co.nz
Marilyn Dyer	Committee Member	Kaitaia	marilynd@tttpho.co.nz
Carol George	Committee Member	Levin	Carol@hcp.co.nz
Nicola Corna	Committee Member	Auckland	Nicola.Corna@middlemore.co.nz
Dawn Acker	Committee Member	Invercargill	dacker@enlivensld.nz
Annie Bradley-Ingle	PNA	Hamilton Office	annette.bradley-ingle@nzno.org.nz