ARTP SLEEP:

S-NEWS

Dreaming of a better night's sleep

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Editor's Welcome

Hello and welcome to another issue of S-NEWS and the first of 2019. For those of you, like myself, who were unfortunately unable to attend the ARTP conference this year, you will have the opportunity to catch up on of some of the research discussed in this issue!

This issue we are also lucky enough to have a Sleep Person article with a different perspective. Matt O'Neill, Chair of Narcolepsy UK brings us a fabulous article on living with Narcolepsy.

I hope you all enjoy this jam-packed edition. Please contact me if you have any articles for our next Edition in Autumn 2019.

Best wishes,

Alison

S-NEWS@artp.org.uk

Dates for your diary:

- 11th - 13th April 2019, Sleep & Breathing, Marseille, France.
- 13th -14th May 2019, ARTP Non-Invasive Ventilation Course, Bristol.
- 17th - 22nd May 2019, ATS Conference, Dallas, Texas.
- 18th-19th June 2019, ARTP Advanced Sleep Course, Bristol.
- 16th-17th September 2019, ARTP Basic Sleep Course, Bristol.
- 20th - 25th September 2019, World Sleep, Vancouver, Canada.
- 28th September - 2nd October 2019, ERS Annual Congress, Madrid, Spain.
- 21st-23rd November 2019, British Sleep 2019, British Sleep Society, Birmingham.

ARTP Sleep People: Matt O'Neill, Chair of Narcolepsy UK

I hadn't paid much attention to my sleep until I was initially diagnosed in 2011 after a private consultation with a Neurologist, at which time I was 43 years old. Although Narcolepsy is classed as a neurological condition, very few neurological Consultants will see any patients with Narcolepsy in their career. In my case, the diagnosing Clinician stated I was the first that he had seen in a decade. After being tired for some time and falling asleep every evening, my wife persuaded me to talk to our GP. Depression was mooted as a potential issue. Anti-depressants are used to combat cataplexy and in my case, I had decided that I was not depressed and ceased treatment with selective serotonin re-uptake inhibitors (SSRIs) about 2 weeks before the diagnosis above. As a result, I experienced some weakness in the knees, legs, and finally experienced some full-body collapses in front of a large group of friends. Quite frightening at the time as cataplexy can often look like a stroke and because mine is quite severe, it results in me not being able to speak or move although I am fully conscious and can see and hear everything going on around me.

When asked how I coped with it initially, I used to say well. Retrospectively, I would say that whilst I didn't do a bad job, I was so caught up in what was happening to me personally and taking various medications to keep me awake and make me sleep that I didn't truly understand the impact of my illness. I remember being relieved that the diagnosis was Narcolepsy but then I thought that it was just a case of taking medication and I would be back at work. The reality was quite different and in early 2018 I took early medical retirement.

We all approach life differently and I often think my situation could be worse. Whilst Narcolepsy is chronic, I am still here and have been incredibly lucky in some ways to be able to spend more time with my family and particularly my children as they were growing up. The flip side is that as a 43-year-old who had worked since the age of 17, I suddenly found myself unable to work and quite often unable to stand, process thoughts effectively and unable to deal with any even minor tasks.

Twenty-First century life is not tolerant of people with Narcolepsy. I think it's probably the strain of having to appear normal and keep up with others around you who don't suffer from Narcolepsy. Because the main symptoms are sleep related and we all sleep, it is very difficult to express to others how you feel because almost everyone has their own definition of sleepy, tired or exhausted.

I often say that I medicate for others, not for me. I have a choice when to be present so I aim to be at my best when I am with others. The downside is that very few people see me when I am at my worst and therefore don't understand how incredibly debilitating Narcolepsy is.

Like many of my peers, my treatment is really trial and error - seeking to balance the need to promote wakefulness and the right kind of sleep (deep) whilst also maintaining a lid on the

cataplexy. It's extremely gruelling when you are up to 72 hours sleep-deprived (on average). At the same time you have to get to grips with a new way of functioning, a very strict medication regime and having to learn to listen to how your brain and body are responding.

Before Narcolepsy, I didn't really listen to my mind or body. Now my life is based around understanding both what my body is doing and what effect the medication is having. Every day is different based on what quality of sleep I have had and what I have done during the day even or preceding day(s).

I'm a huge fan of the NHS and in particular, the people that work within it. My progress from initial conversations with my GP was fairly quick, as were tests to eliminate other conditions and those to confirm my diagnosis. As Narcolepsy is a rare condition, new medications come with Orphan Drug Status which often means that they are seen as expensive and at the Trust / CCG / Formulary level, Narcolepsy is not very well understood or given the attention that it should have. I think that is a very similar picture to other areas of Neurology.

I am very proactive in engaging with established brand pharmaceutical companies, as well as new entrants in the field. I think it's essential that patients and the charities supporting them have transparent and open dialogue with both clinicians and their suppliers. I see it as a major part of my role as the chair of Narcolepsy UK to speed up access to new medicines. That is very reliant on my ability to form sound working relationships with people.

During my talk at the ARTP annual conference, I outlined the work we have undertaken to produce a Narcolepsy Charter for the UK as I strongly believe that our treatment across all aspects of life is often biased and extremely unfair.
Unlike many other conditions, the majority of people diagnosed with Narcolepsy and their carers / families are often not provided with any more information than the name along with an outline of a medication plan and a vague promise that their condition can be "managed" and this is something we all need to work on.

Narcolepsy is a great leveller. Those with the condition often know it best; but they have to find their own route through the maze from diagnosis to the most effective treatment. Sufferers are often swamped dealing with other issues around the education system, employers, and housing and disability payments- Narcolepsy UK can offer support.

My main hope is that a route to more effective treatment is found via another, better funded, research programme - so we might benefit from the re-purposing of another medication rather than wait for the development of new drugs subject to Orphan Drug Status.

I guess my fear is that we will be faced with a continuation of the provision of unlicensed medication to address both wakefulness and sleep without any real guarantee or studies regarding their long-term effects.

More information can be found at https://www.Narcolepsy.org.uk

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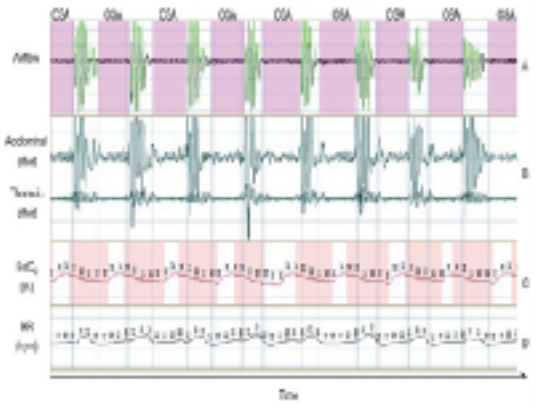

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Evaluation of Physiologist Led Sleep Apnoea Clinic

Sandra Davies, Clinical Scientist

Introduction:

The rationale behind the Physiologist led sleep apnoea clinic is to:

- Allow quicker access to a Healthcare Professional
- To reduce referral to treatment waiting times - The patient's family life and employment circumstances may be adversely affected by waiting.
- To improve patient Quality of Life
- To reduce cost to Health Board

Proposed development of the service: Physiologist Led Clinic Arrangements

Utilising “The strategy document for sleep disordered breathing services in Wales 2010”; under the direction of the Dr.A.D.Gibson, Consultant Chest Physician and the approval from my Departmental and Directorate Managers to allow the commitment to additional study, achievement of a Master’s Module in clinical assessment at Swansea University and attendance on clinical supervised sessions with Consultant mentor gave way to autonomy in clinical history taking, patient assessment, evaluation and diagnosis then subsequent treatment of patients with sleep breathing abnormalities.

Scope of Practice and Rationale for Physiologist Led Sleep Breathing Disorder Clinic

Waiting times for patients to see a Chest Physician specialising in Sleep Apnoea varies across the Health Boards in Wales; with waiting times for Cwm Taf University Health Board of 40weeks.

The advancement of a Physiologist to undertake assessment of a new patient in the sleep clinic would allow a decrease in waiting times and quicker access to diagnosis and therapy.

Although the Physiologist may have the judgment and autonomy in interpreting sleep abnormalities through a variety of screening diagnostic monitoring systems; there is a requirement to obtain proficiency in patient clinical assessment to evaluate the necessity for investigation, for patient re-assurance and subsequent discharge to GP care.

Extending the scope of practice for Physiologists may have been met with some disgruntlement or apprehension from the Respiratory team, however the experience was that a new career direction was accepted and welcomed.

Evaluation of the Service:

The Clinical Physiologist led Sleep apnoea service was reviewed from March 2017 to April 2018.

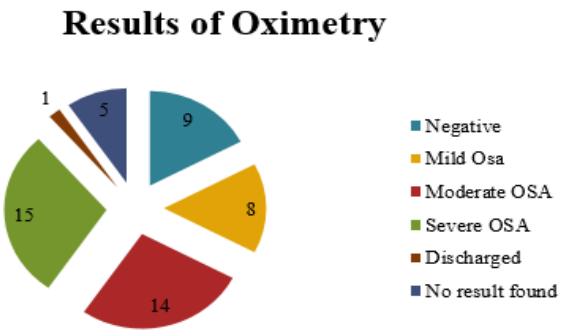
The Service evaluation was based on the cohort of 51 patients clinically assessed by the Physiologist during this time span. The service allows the Physiologist autonomy to assess the patient’s cardiovascular system by performing auscultation, percussion, clinical examination, clinical history taking, analysis of blood results and review of medication.

Using the referral letter as a guide to symptoms, there is a requirement for an up-to date Epworth Sleepiness Scale (ESS) and spouse questionnaire. Blood pressure (BP), saturation of oxygen (SpO2), neck circumference and body mass index (BMI) are also measured.

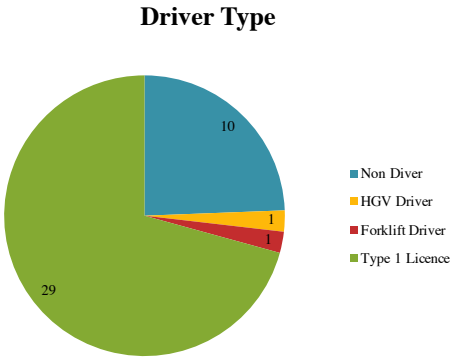
Through the history taking, this outlines occupation, shift patterns, the impact of job role by symptoms and use of vehicle.

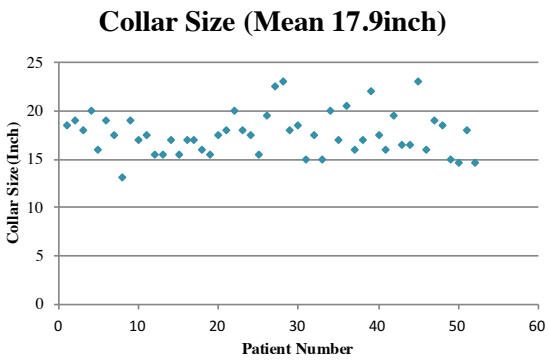
Results:

- Majority of patient referrals are from General Practitioners.
- From the population seen in clinic, the split was 59% Male to 41% female.
- The mean BMI was 38.5.



- 80% of patients were drivers with majority of patients having Class 1 license, only 2 had Class 2 license for their occupation.
- Collar size is considered to be a risk factor for snoring and sleep apnoea when the circumference is greater than **17 inches** for men and greater than **16 inches** in women.





Conclusions:

- Achievement of quicker assessment of patients with symptoms of OSA to a Healthcare Professional with centred learning and high experience in a particular focused area was obtained.
- Reduction in Waiting times to see a Healthcare Professional was reduced from 9months to 5 months.
- Reduction in cost of the service was achieved with a saving the Health Board £340 per month.
- There was also improvement in speed of access to a Healthcare Professional.
- Excessive waiting times may be symptoms of inefficiencies in the healthcare system and should be addressed as part of good management.
- Ensuring that national specific targets set by NHS Quality Improvement Wales are delivered.
- This project has reduced the need for waiting list initiative, thereby again reducing the cost to Health Board.

Future Direction:

- Extending the scope of practice for Physiologists in the clinical arena.
- This audit has demonstrated the usefulness of expanding Clinical Physiologist led services within the Respiratory & Sleep clinics.
- Focused Physiologist led clinics in Cardiology may also be an advantage.

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Acknowledgements: Dr.A.D.Gibson, Consultant Chest Physician; Mr.D.Tyler, Manager Cardio-diagnostic Units, Mr.P.Edwards, Senior Cardiac Physiologist

Do you know someone who may benefit from being an ARTP Sleep member?

"ARTP Sleep" is now being developed to represent and support all healthcare professionals in the delivery of care, training and development of sleep services.

Who Should Join ARTP Sleep?

ARTP Sleep represents and supports all healthcare professionals in the delivery of care, training and development of sleep physiology measurement and therapeutic services. This includes but is not limited to:

-ATOs and HCAs working in oximetry clinics

-Sleep physiologists and technologists involved in PSG units

-Sleep and NIV nurses

- Physiotherapists involved in sleep apnoea services

-Physicians in sleep medicine

-Orthodontists and maxillofacial technicians who support sleep and snoring clinics

-General Practitioners with an interest in sleep medicine (GPwSI & non-GPwSI)

Registration forms and FAQs can be viewed here

Are subjective outcomes influenced by the use of humidification?

Parsons, S., Ismail, Q., Leach, R.

St George's Hospitals NHS Foundation Trust, London

Background: Continuous positive airway pressure (CPAP) is the gold standard treatment for obstructive sleep apnoea (OSA), but can be compromised rending ineffective treatment due to side effects including nasal congestion, dry nose and throat, and a sore throat (Nilius et al, 2018). Nilius et al, (2018) estimates up to 70 % of patients using CPAP will report such symptoms. To help prevent upper airway dryness a humidifier can be used. A French study by D'Ortho et al (2016) found no difference in compliance when comparing 40 patients with and without humidification although patients with humidification were found to have fewer ENT issues, reporting significantly less cold and dry/congested nose with humidification, although the P value is not stated. Despite this there is controversial evidence on the implementation and use of humidification, and consequently there is varying practice across the UK on when this is implemented and the impact this adjunct therapy has on subjective measures.

Aim: To compare sleepiness, fatigue and quality of life in patients using CPAP with and without humidification.

Methods: CPAP naive patients newly diagnosed with moderate-severe OSA were randomly assigned to CPAP without humidification (WOH) and CPAP with humidification (WH). Patients were set up using the F&P ICON AUTO CPAP device (4.5 – 20 cmH2O) with a nasal interface unless intolerant and thus provided with a full face mask. Patients were shown and encouraged to change the humidification level based on comfort. The pathway for CPAP therapy was as per local protocol (Figure 1). Questionnaires including the Epworth sleepiness scale (ESS), functional outcomes of sleep (FOSQ – 10) and visual analogue score for nasal symptoms were performed prior to therapy initiation and on reaching CPAP compliance.

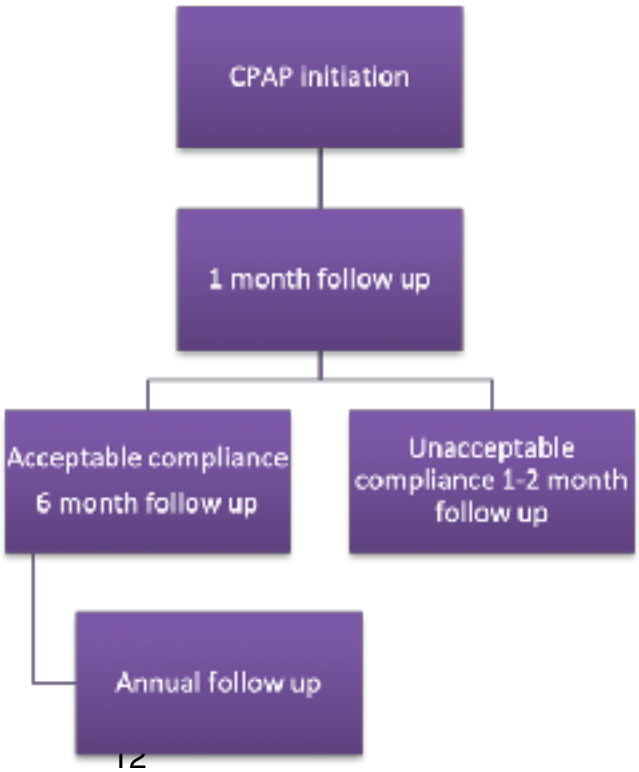

Figure 1: Local pathway for CPAP users.

Results: Twenty patients were included in this study, Table 1 shows the patient demographics. Results are reported as mean ± standard deviation.

Table 1. Patient demographics.

	CPAP WH	CPAP WOH
Gender ratio	4F: 4M	4F:8M
Age (years)	47±10	51±10
BMI (kg/ m^2)	40±11.7	34±5.7

There was no significant difference in the 90th percentile pressure, adherence of CPAP and time in excessive leak as shown in Table 2.

Table 2. Diagnostic and CPAP data.

	CPAP WH	CPAP WOH	p value
AHI (/hr)	45.3± 26.2	47.2±28.4	0.536
90th Percentile pressure	9.3±1.9	9.5±4.1	0.650
Average hours/ night	4.5±2.1	5.6±2.6	0.347
Excess leak (% time)	6.7±10.1	10.6±19.1	0.592

There was no significant difference in the subjective measures as reported by the ESS (p=0.770) and FOSQ-10 (p=0.486), although the general trend was improved scores in the WOH group more than the WH group. Figures 2 and 3 show the pre CPAP and on CPAP questionnaire results; the WOH group experienced more dryness and nasal congestion prior to starting treatment (p=0.018) when compared to the WH group although no significant difference once on therapy (p=0.767). Surprisingly, there was a significant difference in the change of dryness and nasal congestion with the WOH experiencing the greatest reduction in dryness and nasal congestion (p=0.012). Interestingly, two WH patients chose to turn off humidification.

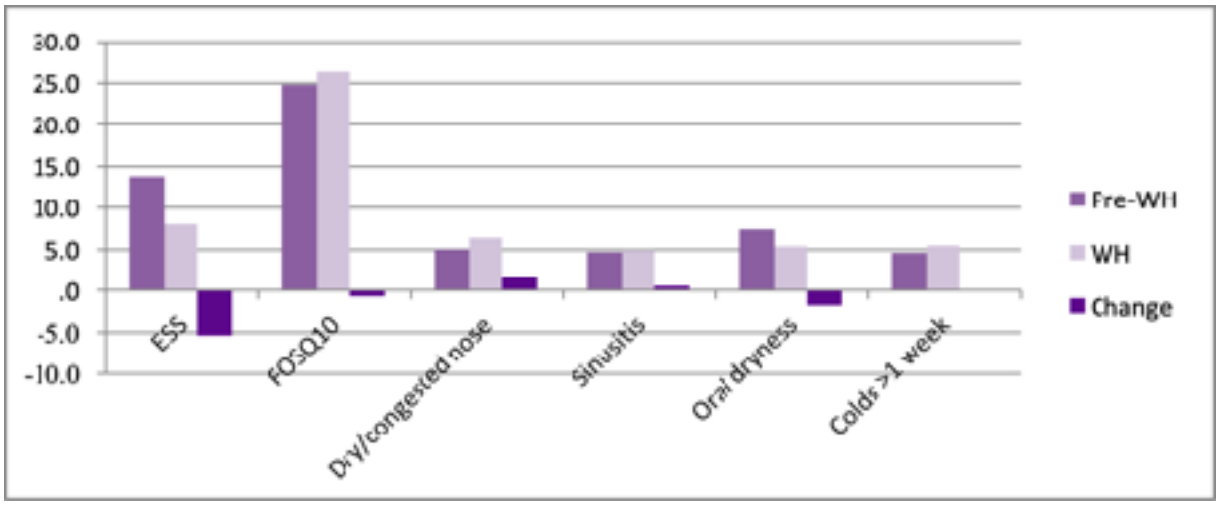

Figure 2. Pre and on CPAP questionnaire for WH group.

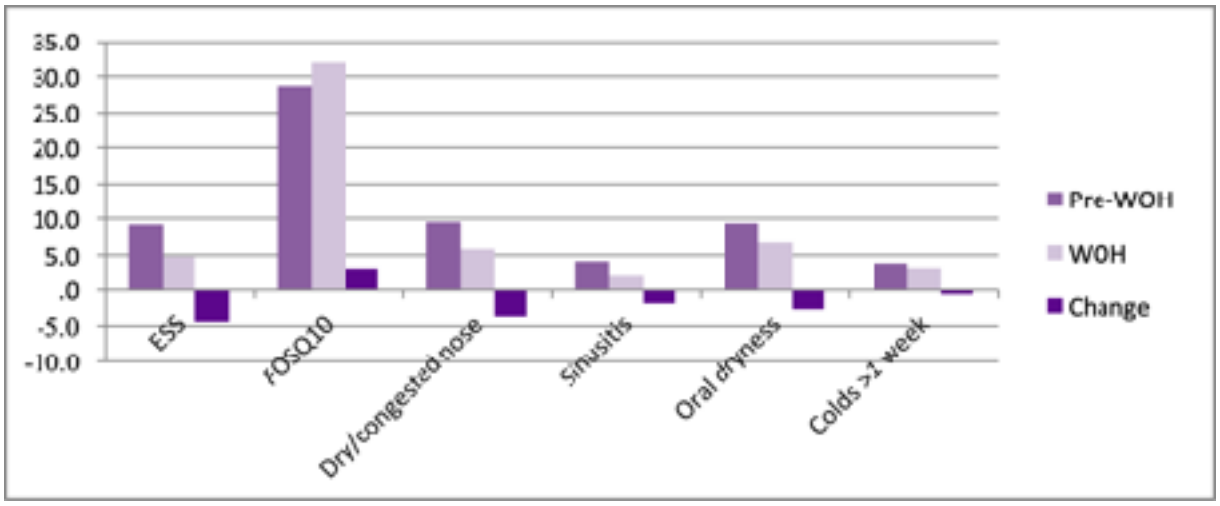

Figure 3. Pre and on CPAP questionnaire for WOH group.

Conclusion: There was no significant difference in the ESS and FOSQ-10 between the WOH and WH groups. Surprisingly, the WOH group were more dry and congested pre CPAP and in contrast to D'Ortho et al (2018), our study did not favour the use of humidification, with the WOH group experiencing the biggest change and hence improvement in ENT symptoms. Although, consistent with D'Ortho et al (2016) we found humidification did not significantly affect compliance and leak. In addition, 2 of the WH group chose to remove humidification due to the dislike of the moisture and heat despite turning the setting to the lowest available. This questions the need for humidification at the start of CPAP therapy and may be to the patient and cost benefit to implement humidification only when needed and after an initial short trial of CPAP therapy.

Limitations: This study presented with several limitations including the low sample size, and the need to conduct a comparative study across seasons.

Acknowledgements: Research sponsored by F&P Healthcare.

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Impact of remote monitoring for CPAP patients; a service audit

Ana Gaspar, Jack Ridler, Marta Vilaca, Priya Nair, Claire Wotton and Dr Alison McMillan

Department of Respiratory and Sleep Medicine, Lister Hospital, East & North Hertfordshire NHS Trust

Introduction:

From August 2016 all patients diagnosed with Obstructive Sleep Apnoea (OSA) starting CPAP (Continuous Positive Airway Pressure) therapy at Lister have been enrolled on a cloud-based remote monitoring system. Remote monitoring and patient engagement tools have been shown to improve daily usage and adherence to CPAP[1], decrease treatment dropout rate[2] and make treatment more cost effective[3].

All therapy data is automatically accessible by the Sleep Team through an online platform (Airview™), allowing for targeted advice and remote implementation of changes to treatment. We conducted a service audit to assess the impact of remote monitoring on our patient pathway and CPAP treatment compliance.

Method:

We selected two groups of 30 patients: group A started CPAP in July and August 2016 (without remote monitoring) and group B started CPAP on the same period in 2017 (with remote monitoring). By selecting the same time frame, we were hoping to minimise confounding factors such as holidays, which can affect patient attendance, and temperature, which has been known to affect treatment compliance.

We explored patient follow-up data for both groups in order to evaluate the impact of remote monitoring on time to first intervention, time to achieve compliance and number of clinics visits until compliance was achieved. An intervention was defined as either a remote change in device settings or a clinic visit.

We excluded treatment dropouts including patients lost to follow-up, patients who decided to stop CPAP or deceased. We also excluded patients that had never achieved compliance (not enough data available).

Results:

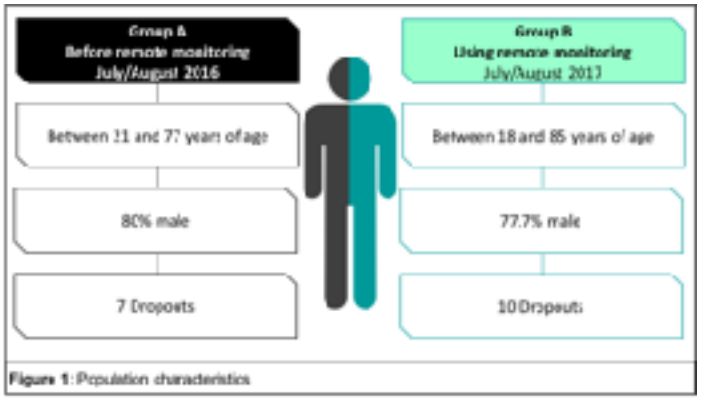

Figure 1: Population characteristics

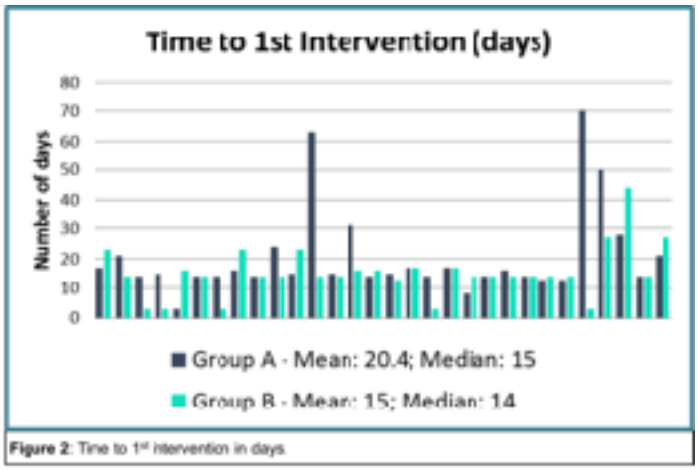

Figure 2: Time to 1st intervention in days.

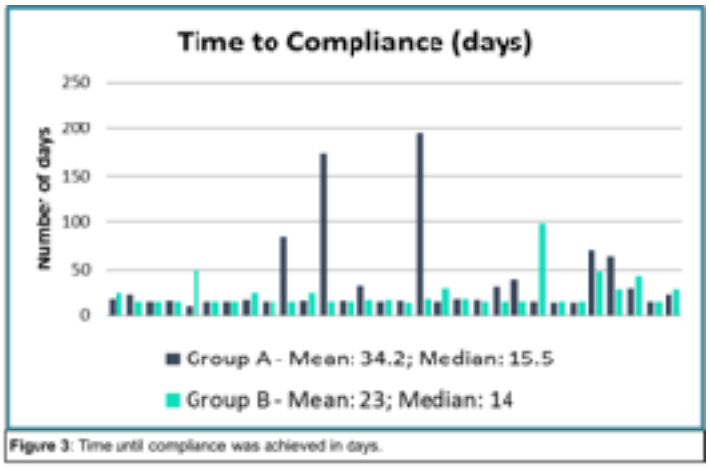

Figure 3: Time until compliance was achieved in days.

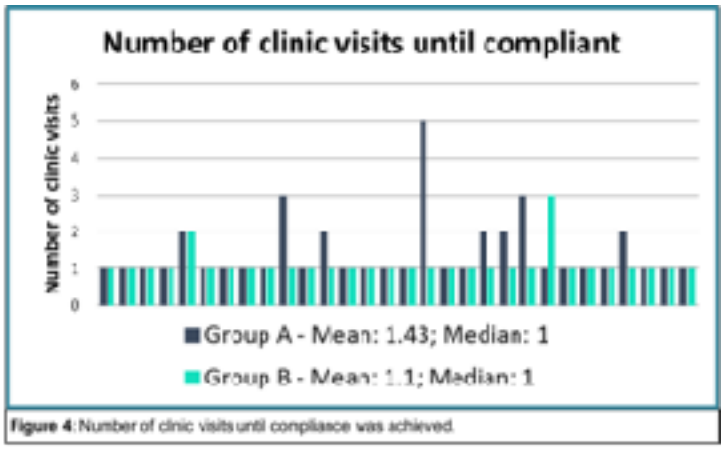

Figure 4: Number of clinic visits until compliance was achieved.

Conclusions:

After the integration of the remote monitoring system in our existing pathway, there was a reduction of 1 day in the median time to first intervention and 1.5 days in the median time to compliance. All patients were contacted on the third day of treatment for support and troubleshooting. The remote monitoring feature allows for changes in treatment settings and targeted advice during this phone call, which would account for this improvement.

There was no change in the mean number of visits as, despite access to this feature, our patient pathway was unchanged.

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Screening and Diagnosis of Obstructive Sleep Apnoea in Pregnancy:

What are the Limitations?

James Pearson, Great Ormond Street Hospital
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Introduction

Sleep disordered breathing in pregnancy (SDBP) is associated with increased risk of adverse maternal and foetal outcomes [1]. SDBP is likely under diagnosed due to severity being typically mild and the overlap of symptoms in both Sleep Disordered Breathing (SDB) and pregnancy. A clear approach on how to identify SDBP is needed.

Aims

This literature review focused on three aims:

1.To investigate what i) screening and ii) diagnostic methods are being used to detect Obstructive Sleep Apnoea (OSA) in pregnant women in the current literature.

2.To investigate the strengths and limitations associated with current screening and diagnostic modalities for OSA in pregnant women.

3.To identify gaps in research in relation to screening and diagnosis of OSA in pregnancy.

Method

Four databases were used to perform the literature search; Scopus, Medline, Web of science and PubMed. All papers were then screened using inclusion/exclusion criteria:

1.Studies looking at either OSA or(SDB) in the pregnant population.

2.Studies including screening or diagnosis methods of OSA or SDB.

3.Duplications were removed.

Results

29 papers were included in analysis, consisting of 5 literature reviews, 19 cohort studies, 3 cross sectional studies, 1 meta-analysis and 1 comparative study. The Berlin Questionnaire (BQ) was the most common screening method (Table 1). Diagnostic methods used are shown in Table 2.

Table 1

Screening Methods	Frequency of use
MAP	1
BQ	10
ESS	6
Stop-Bang	2
Habitual Snoring questionnaire	1
PSQI	1

Table 2

Diagnostic Methods	Frequency of use
PSG	7
Watch-PAT100/200	5
Limited Multi-Channel	2

Discussion

Current screening methods do not reliably predict objective diagnosis of SDBP and often have poor specificity. The STOP-Bang questionnaire appeared to be the only validated screening method in pregnancy, although it is unclear how it has been validated as it includes questions irrelevant to pregnant women e.g: Are you male? and Are you over 50 years old [2] [3]. Both the BQ and Epworth Sleepiness Scale (ESS) are poor predictors of SDBP although demonstrate a more promising role in predicting adverse pregnancy outcomes [4] [5].

Diagnostic methods currently being used are effective in the diagnosis of SDBP and are validated. New devices such as the Watch PAT have also been validated although tend to overestimate severity in comparison to Polysomnography (PSG) [6]. Due to the severity of SDBP tending to be at the mild end of the spectrum some monitors may lack sensitivity. They do have some limitations which mainly revolve around waiting times, errors during home studies and cost [7] [8].

Conclusion

In the future current screening methods could be used in predicting perinatal risk. New screening methods still need to be produced for SDBP that provide reliable predictive values. In addition to this further research is needed to find the most appropriate timings for screening and intervention of SDBP (e.g. CPAP) and if it would be beneficial.

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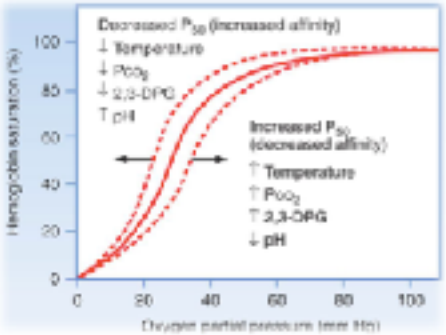

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Research in Sleep:

By Gavin Comber, Respiratory Clinical Scientist

As another year passes there has been a great deal of activity within the research community, none more so than within sleep physiology. Here is a roundup of just some of the most recently published articles. If you want to read the articles in full, follow the hyperlinks at the end of each summary.

The American Association of Sleep Medicine (AASM) has performed a systematic review, meta-analysis of treatment of OSA in adults. They included 184 suitable studies and found, amongst other things that there was no significant improvement in patient outcomes by issuing an auto-titrating CPAP compared to fixed pressure therapy. However educational, behavioural, troubleshooting and tele-monitoring interventions did improve adherence. 10.5664/jcsm.7640

Singh et al (2019) have investigated the relationship between galectin-3 and OSA. Galectin-3 is a biomarker of myocardial fibrosis, associated with an increased cardiovascular risk. It was observed that levels were raised in women with OSA but not men suggesting a possible sex-specific relationship that could be used to identify those at increased risk of OSA. https://doi.org/10.1007/s11325-019-01788-5

Taillard et al (2019) have looked to identify EEG power values and spindle characteristics which occur in older adults with mild cognitive impairment. 29 patients with cognitive impairment were compared to 29 control subjects. It was found that a reduction in theta, sigma and slow wave activities were associated with a higher risk of developing cognitive impairment. Poor sleep consolidation, lower amplitude; and faster frequency of spindles may be used as biomarkers of worsening cognitive impairment. 10.3389/fneur.2019.00197

Brenner et al (2019) have identified a higher all cancer incidence in patients <45 years with severe OSA. Of 5,423 subjects with a 5.9 year median follow up, 1,533 were diagnosed with OSA below the age of 45 and were associated with an increased risk (HR 3.7, p=0.008). This suggests that younger patients with severe OSA may warrant increased cancer screening compared to the general population. https://doi.org/10.1159/000486577

Farabi et al (2019) have observed a positive correlation between OSA, glycaemic profiles and insulin resistance in pregnant women with obesity. Although a small study, this could prove a treatable cohort in the future to help improve outcomes in those at high risk of gestational metabolic disorders. https://www.ncbi.nlm.nih.gov/pubmed/30794722

Adenotonsillectomies are a common treatment for OSA in children however the impact on ventilatory control is less understood. Domany et al (2019) have concluded that blood gas homeostasis normalises when compared to controls, 6 months post surgery. This was after 53, 7-13 year olds with OSA had higher planter gain and lower controller gain compared to 46 controls. There was no significant difference in loop gain. https://doi.org/10.1093/sleep/zsz045

Finally, Alt et al (2018) have investigated the impact of chronic rhino-sinusitis on both subjective and objective sleep measures, to assess how much sleep disturbance it causes. They assessed 108 patients (52 with chronic rhino-sinusitis and 56 controls) and found that patient reported sleep quality decreased with the disease along with increased nocturnal awakenings, increased REM latency and increased snoring. https://doi.org/10.1002/alr.22212

If anyone has any comments on the above please do get in touch and don't forget to follow us @ARTP_Research

A Complex Sleep Apnoea Case: Role of enhanced technology and remote monitoring

HM Engleman, N Faria Cachada, N Derashri, S Stevens, JA Leahy, T Kelly.

Philips Respironics UKI. Chichester Business Park, City Fields Way, Tangmere, Chichester, West Sussex, PO20 2FT.

Introduction:

Complex sleep-disordered breathing can be difficult to detect and treat. Quicker, more accurate and more detailed therapy data can aid quantitative and qualitative identification of central or complex sleep apnoea, and aid escalation of therapy from auto-CPAP (APAP) to auto servo-ventilation (ASV) when indicated [1].

Methods:

Presented are different time-resolutions of therapy data from a single case (patient DO) when on APAP and ASV treatments, and showing therapy algorithms at work.

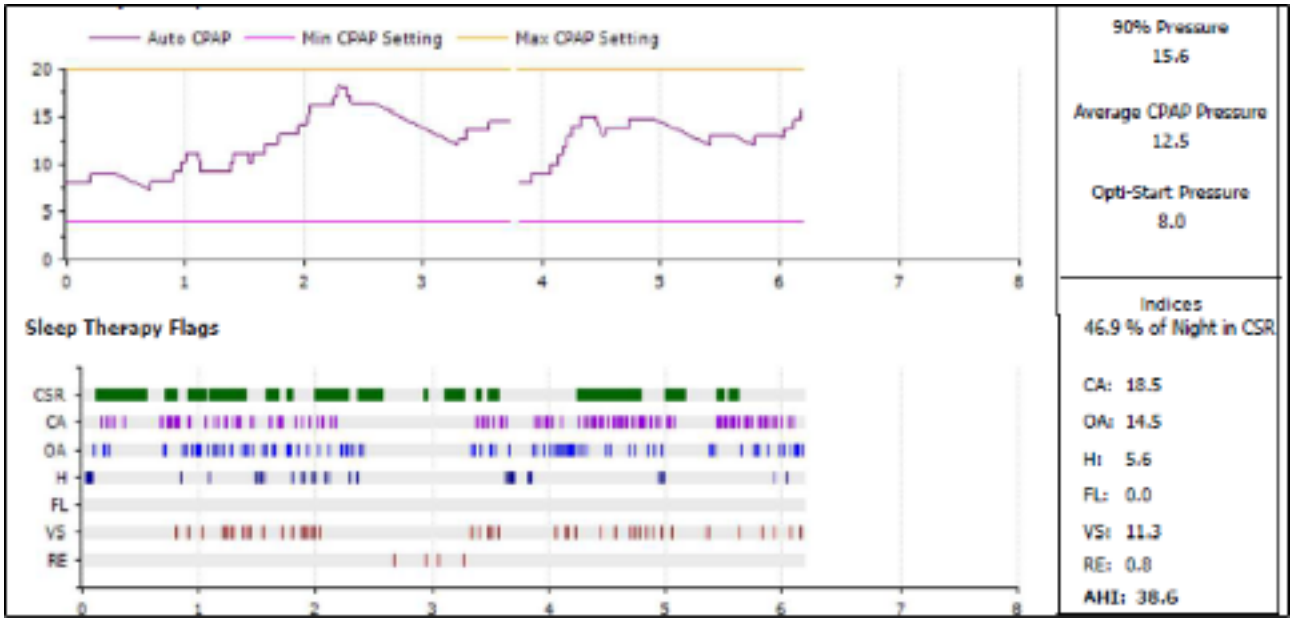
Results:

Patient DO was diagnosed with sleep-disordered breathing, with ODI of ~50/hr. The patient was prescribed APAP which he was compliant with. He showed good mask leak profiles when he was followed up with remote monitoring of objective data at 1 week and 1 month.

At both these time points, raised residual apnoea + hypopnoea index (AHI) and clear-airway, central apnoea index (CAI) were noted (~39 and ~19 per hr, respectively) as well as raised values for auto-scored Cheyne-Stokes respiration (CSR), averaging 33% of therapy time.

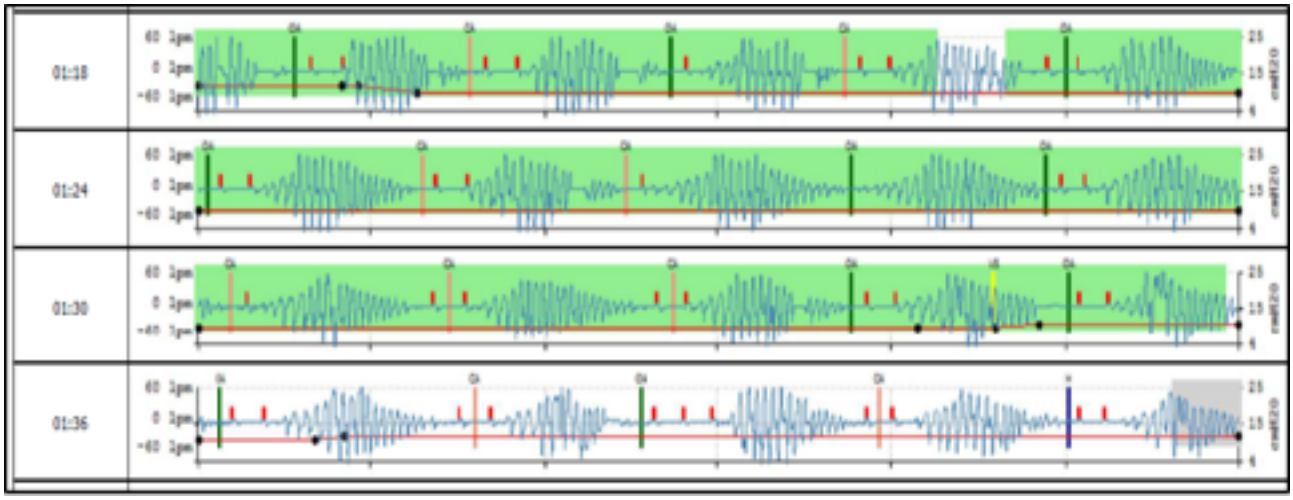
A sample daily detailed report from a night on APAP (Fig 1) shows flags of ongoing sleep-disordered breathing during APAP titration, with pressures freezing or lowering during runs of non-responsive apnoeas and hypopnoeas and CSR. 90th centile pressure was 15.6 cmH2O with average AHI and CAI of 39 and 19 per hr respectively, and 47% time in CSR.

Fig 1: APAP Daily details



Examination of breath-by-breath flow waveform from this night shows waxing/waning pattern and clear-airway apnoeas typical of CSR, with a cycle period of ~60 secs (Fig 2).

Fig 2: APAP waveform



These APAP concerns were highlighted to the clinician, who arranged a cardiologist review and an echocardiogram. This subsequently showed left ventricular ejection fraction (LVEF)

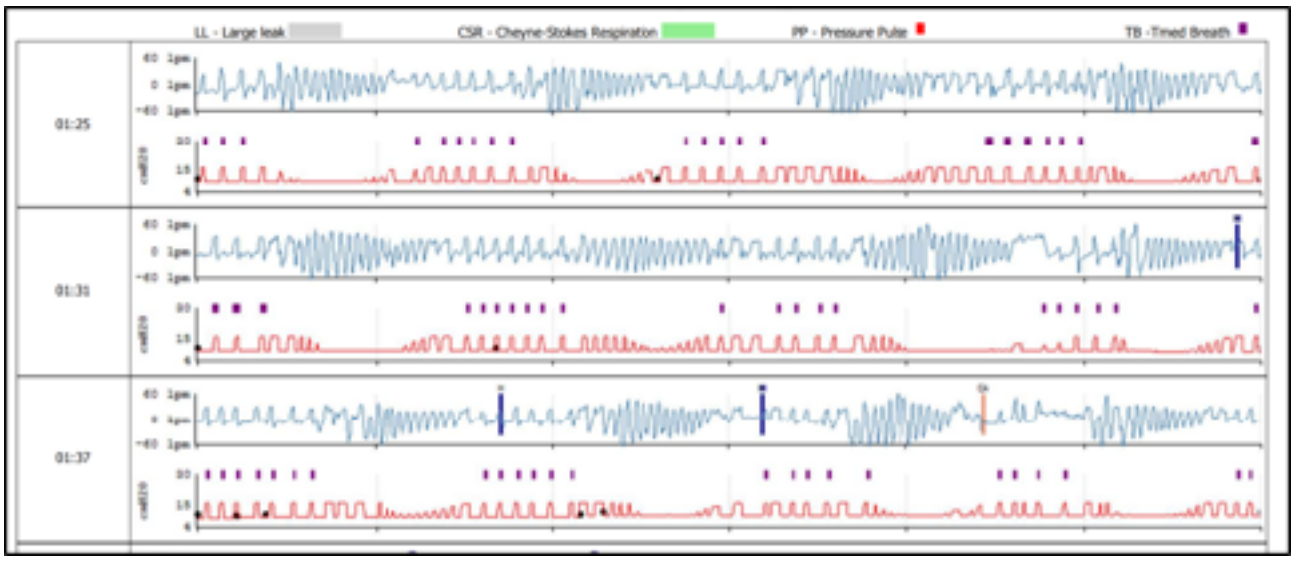
of >45%. Mr. DO then transferred to ASV, with representative daily details and flow waveform in figs 3 and 4.

Auto-scored AHI and CSR reduced to ~6/hr and ~3% respectively over the first month on ASV. A sample daily detailed report (Fig 3) shows minimal EPAP, averaging 4.7 cmH2O, being applied with average pressure support of 3.7 cmH2O and 90th centile pressure support of ~12 cmH2O. Epworth score showed a marginal fall from 10 to 8/24 on ASV, and compliance on ASV was >90%.

Fig 3: ASV Daily details

Breath-by-breath ASV waveform (Fig 4) showed pressure support and back-up breaths activating and de-activating in response to patient flow, counter-balancing an underlying CSR pattern.

Fig 4: ASV Waveform



Discussion and Conclusion:

Remote technology in this case enabled timely and detailed data review by clinical specialists, highlighting qualitative and quantitative features of complex sleep-disordered breathing and suitability for escalation of treatment from APAP to ASV. Residual sleep-disordered breathing, clear-airway apnoeas and CSR were improved by ASV.

Disclosure:

All authors are employees of Philips Respironics UKI.

References:

*1.*Randerath. ERJ Open Res. 2017 Oct; 3(4): 00078-2017.

Sleep In the News:

The importance of a getting enough sleep

A recent article published by “Open Access Government” looks at the issues we face within the workplace when not getting enough sleep. Maddy Keating notes that reduced sleep effects our decision making processes and can also effect our self-control. An example given is a sleep deprived manager who is likely to give harder feedback to staff members, which could ultimately lead to poor team morale.

A recommendation of 7-9 hours per night is given for all team members to ensure wellbeing at work.

Sleep quality is also important. Lack of time spent in REM sleep can result in a shorter temper. Further recommendation is given to avoid alcohol and late night television. Checking emails before going to bed and immediately on waking can also have a negative impact, stopping the brain from truly shutting off.

Finally Maddy Keating suggests that perhaps a more flexible working day is required to get the best out of employees. Starting work later or finishing earlier may allow for reduced commute times and ultimately more time to sleep.

For more information please click here.

The latest sleep tech: The Smart Mattress

According to The Verge, company “Eight Sleep” have produced a mattress which is said to provide detailed tracking of your sleep. This includes how many hours you have slept and how deeply you are sleeping. It is also said to improve your sleep by adjusting its own temperature during the night. The mattress will heat to allow you to drop off to sleep and also cool to enable easier waking. It also syncs with other smart devices in your home, and smart phones to enable you to track data. However with a price tag of around $2000 will this be technology used by your average person?

For more information please click here

Weekend lie-ins don’t help the sleep deprived

It has been reported that a lack of sleep can increase the risk of type 2 Diabetes and Obesity. A recent study has looked at the possibility of weekend lie-ins on those who are sleep deprived during the working week. The BBC reports on this study which took two groups of participants and ensured they received only 5 hours sleep per night for two weeks. One group was however allowed extra sleep at weekends, whilst the other continued to receive the restricted sleep levels. Results showed similar results in both groups of participants with an increase in night time snacking and ultimately weight gain. Lead author Chris Depner noted no metabolic benefits from weekend lie-ins.

For more information please click here

ARTP Conference 2019 Award Winners:

Sleep Manufacturer of the Year: Fisher & Paykel

Lyn Davies Best Sleep Poster Award Winner: Holly Van Ristell