SLEEP DISTURBANCE IN MENOPAUSE

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MRS LJ

• 55y.o mother of 3 children (25, 22, 18y.o)
• 3 years of sleep onset insomnia, nocturnal awakenings and tiredness
• Phx – depression (no current treatment)
• No menstrual periods for 18 months
• Epworth Sleepiness Score 7/24
• Works 3 days a week (office)
• Weight gain of 5kg in last 2 years
• Snorer
• Occasional vasomotor symptoms
• Normal FBE, iron studies, TSH

• "There is severe obstructive sleep apnoea in REM"
• "Recommend treatment with CPAP"
• "If CPAP is not tolerated consider a mandibular advancement splint"
• "Untreated sleep apnoea is associated with motor vehicle accidents, hypertension, cardiac disease and stroke"

WHAT WOULD YOU DO?

• REFER FOR CPAP THERAPY?

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• REFER FOR MANDIBULAR ADVANCEMENT SPLINT?
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- REFER FOR CPAP THERAPY?
- REFER FOR MANDIBULAR ADVANCEMENT SPLINT?
- LEAVE SLEEP APNOEA UNTREATED AND INVESTIGATE AND MANAGE OTHER FACTORS THAT MAY BE IMPACTING SLEEP – vasomotor symptoms, consider mood disorder, lifestyle factors, circadian rhythm disturbance.

Epidemiology

- 40-60% of Middle aged women report sleep problems
- 26% of perimenopausal women and beyond describe severe sleep problems that impact QOL and meet criteria for insomnia Ohayan, M. Arch Int Med 2006
- Population studies demonstrate sleep difficulties are linked to menopause stage and changes in FSH and oestradiol over and above the effects of age.
- It is normal for older individuals to spend more time in wakefulness – as individuals get older, in many cases it is not the awakening that is the problem but rather the individuals response to it.

- 53% of middle aged women with OSA, PLMs or both Freedman et al. Menopause 2007
- 20% of middle aged women with moderate-severe OSA (SWAN study) – Hill et al. Sleep 2009
- OSA – in majority of cases in this group does not necessarily require treatment – Know the evidence of risks associated with OSA (majority of patients diagnosed with OSA do not have increased long term health risk and treatment may be more a burden than benefit – decision to treat dependent on comprehensive clinical assessment together with the sleep study result)
- PLMs – common incidental finding particularly in older adults – treatment also dependent on clinical assessment together with interpretation of sleep study (i.e. are the leg movements impacting sleep architecture).

Sleep Regulation – Overview

- VLPO neurons
- Non-REM
- REM
- GABA, adenosine
- ACH, histamine, NA, serotonin, hypocretin
- Stage 1
- Stage 2
- Stage 3
- Stage 4
- REM sleep
- Awake
Late perimenopausal and post menopause
- Reduced sleep efficiency
- Increased wake after sleep onset
- Increased cortical arousals
- Increased N1 (transitional) sleep

Light
Melatonin

Post menopause
Possible suppression of circadian drive

Night-time peak serum melatonin levels in subjects of different ages, years

Sleep Disturbance in Menopause
- Likely to be multifactorial in aetiology
  - Vasomotor symptoms and Hormonal Changes – increased cortical arousals and awakenings (sleep fragmentation), reduced sleep efficiency and changes to sleep stages
  - Circadian Rhythm abnormalities
  - Exacerbation of Primary Insomnia
  - Mood Disorder (bidirectional relationship between sleep and mood)
  - Lifestyle Factors
  - Primary Sleep Disorders (sleep disordered breathing, periodic limb movement disorder)
  - Aging and Medical Illness

Thanks to Prof Martha Hickey
Oestrogen and Progesterone receptors are found in brain regions associated with driving sleep
- Oestrogen – sleep maintaining
- Progesterone – sleep promoting
- Role of HRT (and SSRIs) in improving sleep in Menopause is controversial – mixed results (recent results are more positive) – possibly reduces degree of sleep fragmentation, reduced cortical arousals and increases REM – Joffe et al. Semin Reprod Med 2010

Evaluation
- Mainly guided by clinical assessment – Sleep Hx
- Lack of correlation between subjective and objective measures of menopause related sleep disturbance with sleep studies – raises the question of the validity of laboratory/home based sleep assessment – Shaver et al. Sleep 1991
- Incidental findings on sleep studies (sleep apnoea, periodic limb movements) may not necessarily be causing symptoms and may not require treatment

Management
- Sleep Hygiene and Circadian Rhythm
  - Melatonin – not much evidence but often trialed if Hx suggests some circadian disruption
  - Evening Exercise and exposure to Natural Light/ Bright Light Therapy
- Manage Vasomotor Symptoms
  - HRT
  - SSRIs/ SNRIs
- Diagnose and Treat Depression
- Identify Lifestyle Factors and any Psychosocial stressors – family dynamics, work issues, sleep deprivation
- Primary Insomnia - CBT

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Sleep, Fatigue & Circadian Rhythm Abnormalities in Cancer

Physiological Factors
- Pain
- Nausea etc...

Psychological Factors
- Depression
- Grief

Social and Cultural Factors
- Chornobiological Factors
- Morning bright light treatment may prevent overall fatigue from worsening during chemotherapy (39 women with breast cancer)
  Ancoli-Israel et al. Supp Care in Ca 2011
- CBT is an effective treatment for insomnia in breast cancer survivors
  Florentina et al.
- Melatonin may improve subjective sleep quality
- CANSLEEP PROGRAM

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Nocturnal Awakenings

Tiredness

Lifestyle Factors – Psychosocial Stressors, Work/Life Balance

Mood Disorder – Anxiety and Depression

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Age Related Factors

Vasomotor Symptoms

Circadian Rhythm Factors – Routine, Morning Light, Exercise

Sleep Hygiene – Sleep Duration, External Disturbances, Husband Snoring etc...

Sleep Apnoea

WHAT WOULD YOU DO?

• Refer for CPAP Therapy?
• Refer for Mandibular Advancement Splint?
• Leave Sleep Apnoea Untreated and Investigate and Manage Other Factors That May Be Impacting Sleep – Vasomotor Symptoms, Consider Mood Disorder, Lifestyle Factors, Circadian Rhythm Disturbance.

Note – current evidence does not suggest the degree of OSA conveys significant long term health risk. The clinical assessment suggests other factors are driving the symptoms. The evidence does not support that REM isolated OSA causes excessive sleepiness.