

Background

- Sleep deprivation can impair health-related quality of life and increase the risk of cardiometabolic and neuropsychiatric disease
- There is a lack of studies describing sleep disorders in patients with vasculitis
- In vasculitis, several factors could contribute to a higher risk of sleep disturbances, such as use of glucocorticoids or upper airway involvement

Objective

This study aimed to determine the frequency of sleep disorders and to identify factors associated with sleep disorders in patients with vasculitis

Methods

- Cross-sectional survey from Feb. 1 – Apr. 1, 2023, to patients registered in the Vasculitis Patient-Powered Research Network (VPPRN)
- Survey included validated indices: Epworth Sleepiness Scale (ESS, range 0-24, <10 normal); Functional Outcomes of Sleep Questionnaire-10 (FOSQ-10, range 5-20, higher scores indicate better function); Multivariable Apnea Prediction Index (MVAP, range 0-1, ≥ 0.6 , high risk for Obstructive Sleep Apnea (OSA))
- Participants provided data on demographics, previously diagnosed sleep disorders, co-morbidities characteristics of their vasculitis, and medications
- Multivariable logistic regression was performed to identify factors associated with any sleep disturbance (defined as ESS ≥ 11 , FOSQ-10 < 18, MAPV ≥ 0.6 , and/or physician-diagnosed insomnia, OSA, restless leg syndrome (RLS) and/or narcolepsy)
- Factors were included in the model based on knowledge from prior literature and goodness of fit using the Akaike information criterion

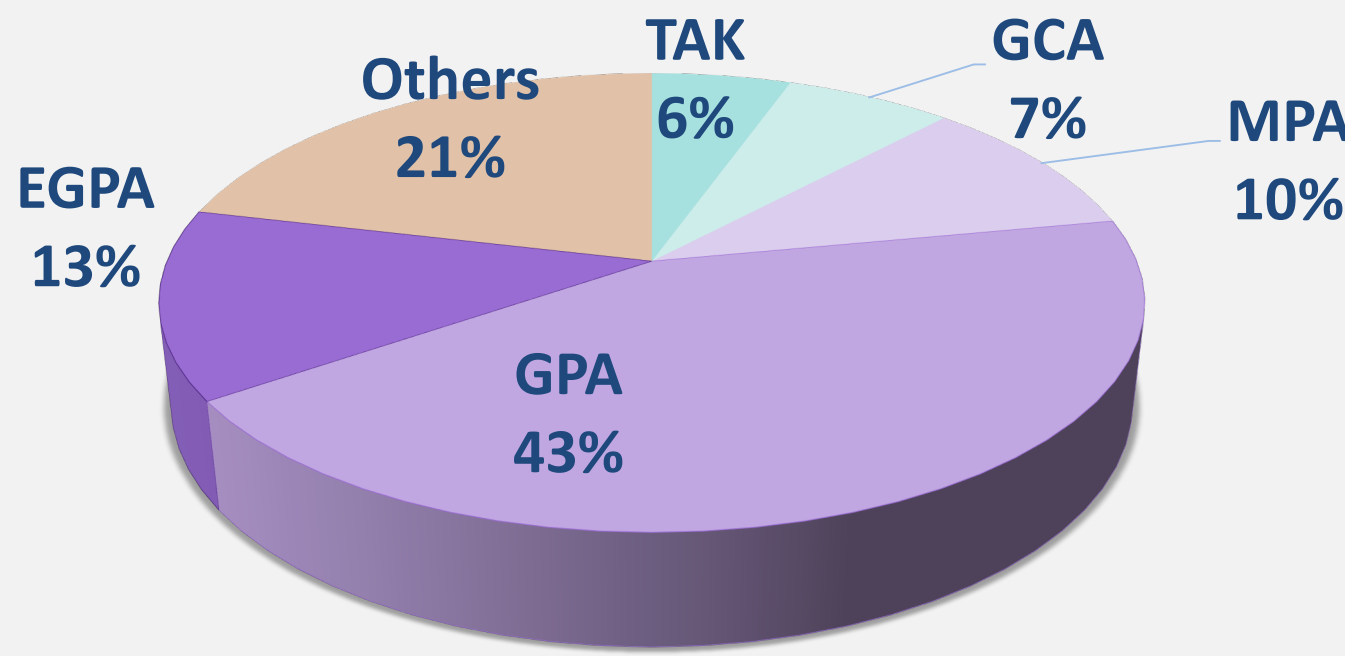
Acknowledgements

- We thank all the study participants
- VPPRN received funding from: The Vasculitis Foundation, GSK

Results

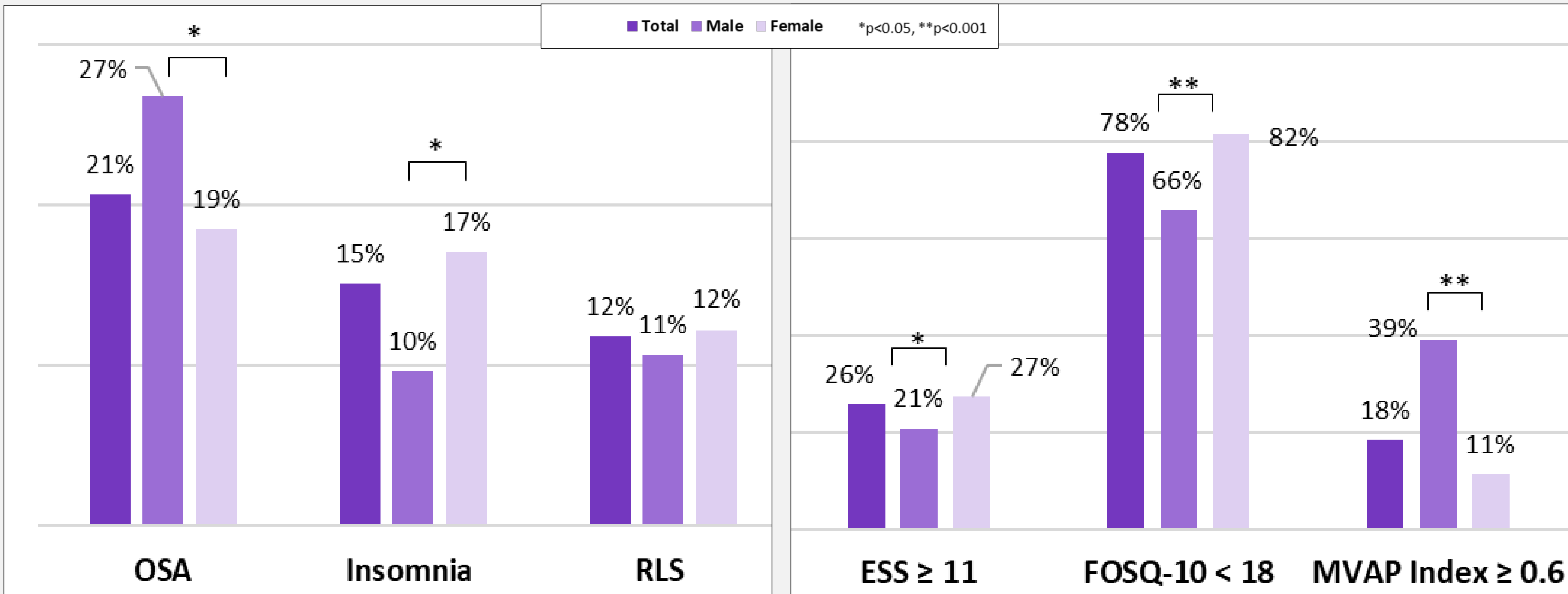
Characteristics of the Study Population

- N= 1,104 patients with vasculitis
- 74% were female
- Mean (SD) age = 59.5 (13.6) years
- Disease duration = 9.7 (8.4) years
- 73% lived in USA, 10% Canada, 11% Europe
- 37% on glucocorticoids at time of survey
- 82% on 10 mg daily pf prednisone or less



GPA=Granulomatosis with Polyangiitis, EGPA=Eosinophilic Granulomatosis with Polyangiitis, MPA=Microscopic Polyangiitis, GCA=Giant Cell Arteritis, TAK=Takayasu's Arteritis

Sleep Disturbances in Vasculitis by Sex



- 82% of patients with vasculitis reported at least 1 sleep disturbance
- Daily functional impairment and insomnia were more common in females
- OSA was more common in males

Factors Associated with any Sleep Disturbance in Patients with Vasculitis

Factors included in the Model	Odds Ratio (95% Confidence Interval)		
	All (n=1013)	Females (n=753)	Males (n=260)
Age	1.01 (0.99-1.02)	1.01 (0.99-1.03)	1.01 (0.97-1.05)
Male Sex	1.04 (0.83-1.29)		
Perceived financial difficulties	1.66 (1.13-2.45)	1.64 (1.05-2.57)	1.84 (0.78-4.38)
Smoking	1.33 (1.01-1.75)	1.37 (0.97-1.92)	1.29 (0.77-2.18)
Physical activity (low vs. moderate)	1.91 (1.16-3.15)	1.99 (1.12-3.53)	2.05 (0.67-6.32)
Body Mass Index	1.10 (1.05-1.15)	1.07 (1.02-1.12)	1.25 (1.12-1.40)
Type of vasculitis (ANCA-associated vs. large vessel vasculitis)	1.24 (0.77-1.98)	1.42 (0.83-2.43)	0.75 (0.22-2.55)
Pain (Visual Analogue Score)	1.44 (1.25-1.66)	1.40 (1.19-1.66)	1.62 (1.18-2.23)
Vasculitis symptom (Visual Analogue Score)	1.16 (1.03-1.31)	1.21 (1.05-1.40)	1.06 (0.82-1.36)
Current prednisone use	1.00 (0.80-1.25)	0.93 (0.71-1.23)	1.12 (0.72-1.73)
Co-Morbidities:			
Cardiovascular disease	1.46 (1.02-2.07)	1.35 (0.86-2.12)	1.73 (0.93-3.22)
Hypertension	0.72 (0.57-0.89)	0.74 (0.57-0.97)	0.71 (0.46-1.09)
Psychiatric illness	1.77 (1.31-2.39)	1.77 (1.27-2.48)	1.97 (0.94-4.12)
Disease manifestations at diagnosis			
Sino-nasal	1.26 (0.96-1.67)	1.57 (1.10-2.22)	0.95 (0.56-1.60)
Renal	1.40 (1.10-1.77)	1.11 (0.83-1.49)	2.02 (1.28-3.20)

Summary and Conclusions

- This large study of sleep disturbances in patients with vasculitis revealed that in this population, sleep disturbances were extremely common and varied by sex
- Prevalence of OSA (20%) was higher than what has been reported in the general population (6-17%)
- Perceived financial difficulties, low physical activity, high BMI, history of psychiatric and/or cardiovascular disease, higher pain scores, sino-nasal symptoms, renal involvement, and worse symptoms of vasculitis were associated with sleep disturbances
 - Addressing these factors may improve sleep and quality of life
- These results indicate more attention should be paid to potential sleep disorders in patients with vasculitis