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P1.24: ASSESSMENT OF RISK FACTORS IN CHRONIC AIRWAYS DISEASE EVALUATION (ARCADE)

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Parameters	CONTROLS		ATEN		AML		ENL		LOS	
GENDER	M (89)	F (42)	M (75)	F (39)	M (66)	F (47)	M (135)	F (60)	M (95)	F (47)
AGE	49 ± 7	47.5 ± 7	56 ± 8	56 ± 8	55 ± 8	54 ± 9	55 ± 8	56 ± 8	57 ± 8	55 ± 7
SBP mmHg	127 ± 14	118.5 ± 14	131 ± 14	131 ± 12	136 ± 12	133 ± 11	135 ± 13	132 ± 12	131 ± 12	133 ± 12
DBP mmHg	80 ± 10	75 ± 9	83 ± 9	81 ± 8	84 ± 8	80 ± 10	84 ± 7.5	81 ± 8	83 ± 7.5	82 ± 8
HR lpm	63 ± 12	71 ± 11	61 ± 11	62 ± 7	66 ± 10	68 ± 12	67 ± 15	69 ± 11	66 ± 11	67 ± 12
PP c mmHg	37 ± 8	43 ± 9	48 ± 11	56 ± 10	48 ± 14	51 ± 12	47 ± 12	52 ± 11	46 ± 14	55 ± 9
PP p mmHg	47 ± 8	43 ± 10	48 ± 10	50 ± 9	51.5 ± 9	52.5 ± 15	51 ± 10	51 ± 10	48 ± 10	51 ± 7.5
Aix c %	19 ± 9.5	31 ± 12	32 ± 11.5	43 ± 8	30 ± 12	41 ± 9	28 ± 14	38 ± 11	27 ± 11	41 ± 11
Aix p %	-30 ± 26.5	-7 ± 31	4 ± 3	24 ± 18	-5 ± 28	19 ± 20	-10 ± 36	18 ± 47	-13 ± 26	16.5 ± 27.5
PWV m/s	9 ± 2	9 ± 2	12 ± 9.5	10 ± 3	12 ± 2	10 ± 2	12 ± 2	10 ± 2	11 ± 2	10 ± 2

Ref: SBP: Systolic Blood Pressure DBP: Diastolic Blood pressure HR: Heart Rate PPc: Central Pulse Pressure PPp: Peripheral Pulse Pressure Aix c: Central Augmentation Index Aix p: Peripheral Augmentation Index PWV: Pulse Wave Velocity.

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ASSESSMENT OF RISK FACTORS IN CHRONIC AIRWAYS DISEASE EVALUATION (ARCADE)

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Background: Chronic obstructive pulmonary disease (COPD) is a multi-system disorder with important systemic co-morbidities. These include increased cardiovascular (CV) risk which accounts for 30-50% of deaths. Cross-sectional studies have identified increased arterial stiffness in COPD, however there is no validated prognostic CV risk predictor.

Methods: The ARCADE is a longitudinal study of up to 1500 patients with confirmed COPD. Assessments include pulmonary function (spirometry), arterial stiffness (aortic pulse wave velocity (PWV)), blood pressure (BP), blood biochemistry and 6-minute walking distance (6MWD). These assessments will be repeated after two and five years.

Results: Thus far 300 patients have been compared to 36 controls (table 1). Mean PWV, systolic BP, and HsCRP was higher in patients than controls, and lung function impaired in patients with COPD. These differences remained after adjustment for age. Although mean blood pressure was similar, on assessment more patients (n= 185, 62%) met the criteria for hypertension (>140/90mmHg) than controls (n=16, 44%). More patients with COPD were on treatment for hypertension (n= 138, controls = 3, p=<0.001) and hypercholesterolemia (n=107 controls = 7, p=0.04). In patients, PWV related to the number of co-morbidities (r=0.377, p<0.05).

Conclusions: This is the first study to evaluate the progression of the systemic components of COPD over the medium to longer term. The results to date confirm previous findings of elevated PWV and increased CV risk factors. The longitudinal assessments will inform the understanding of the rate and cause of arterial stiffness and other systemic components in COPD, and may guide therapeutic interventions.

Mean (SD)	COPD	Control	p
Age (years)	66 (8)	62 (10)	0.012
Gender M/F	150/150	18/18	0.508
FEV ₁ %	56 (20)	102 (13)	<0.001
FEV ₁ /FVC	0.53 (0.12)	0.77 (0.06)	<0.001
Peripheral Systolic BP (mmHg)	147 (19)	138 (18)	0.005
Peripheral Diastolic BP (mmHg)	82 (11)	80 (10)	0.345
Peripheral Mean Arterial Pressure (mmHg)	104 (12)	101 (12)	0.089
Heart Rate (bpm)	74 (11)	68 (10)	<0.001
PWV (m/s)	9.9 (2.5)	7.8 (1.3)	<0.001
HsCRP (mg/L)	6.4 (8.7)	3.0 (3.0)	<0.001

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IN OLDER ADULTS, SEDENTARY TIME IS ASSOCIATED WITH INCREASED BRACHIAL PULSE PRESSURE INDEPENDENT OF PHYSICAL ACTIVITY LEVELS AND AGE

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Background: Sedentary behaviour leads to increased blood pressure (BP), and regular physical activity reduces BP. However, the extent to which elevated BP associated with sedentary behaviour can be offset by regular physical activity is unknown, and was the aim of this study.

Methods: Study participants (n=637, aged 66.3±7years; 49% male) were from the Tasmanian Older Adult Cohort Study, which was a randomly selected community sample of older men and women aged 50-79 years. Average time spent per day in sedentary behaviour (e.g. sitting/lying) and physical activity (light, moderate and vigorous intensity) was determined by accelerometers (worn over 1 week). Brachial BP was measured by automated oscillometry.

Results: The average activity levels per day were: sedentary (584±94 min), light (227±72 min), moderate (32±25 min) and vigorous (1±4 min) intensity. Participants in the highest tertile of sedentary time had the highest pulse pressure (PP; p=.014) and highest prevalence of isolated systolic hypertension (p<.001). Sedentary time was significantly associated with PP (r=0.110; p=.005). This association remained significant on multiple regression analysis after adjustment for physical activity levels, sex, body mass index and presence of diabetes (β=.158; p=.005). Age was also associated with PP and this was both independent of, and partially mediated by, sedentary time.

Conclusions: The amount of time spent sedentary is independently associated with increased PP in older adults and could be one reason why PP increases with age. This suggests decreasing sedentary behaviour in older people could help to achieve better BP control, regardless of the level of physical activity.

P1.26

AORTIC PULSE WAVE VELOCITY IN OBESE CHILDREN AND ADOLESCENTS

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The global childhood obesity epidemic threatens future health due to a rise in cardiovascular disease. There is a need for identifying subclinical organ damage (SOD) markers when evaluating cardiovascular risk in the young since hard end points does not/rarely exist among adolescents. Aortic pulse wave velocity (aPWV) is an established marker of SOD in adults. Furthermore, studies on adults have shown that obesity is correlated with a higher aPWV. It is uncertain whether this relationship is manifest already in the young since high aPWV is regarded as a measure of chronic change to the vasculature. The present study assess aPWV in a cross-sectional survey where 100 obese children and adolescents, median age 12.7 years (range 10.1 to 18.9) are compared with 50 healthy gender and age matched individuals, median 12.9 years (10.3 to 17.9). Mean aPWV (SD; 95% CI) were in the obese group 4.52 m/s (0.53; 4.42 to 4.62) and in the control group 4.32 m/s (0.50; 4.17 to 4.47). Preliminary