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TIME INTERVALS BETWEEN THE END OF A WAVE TO THE ONSET OF QRS IN RELATION TO AGE IN A GROUP OF HEALTHY SINGAPOREAN PEOPLEHuang Fei Qiong, Zhong Liang, Tan Lay-kheng, Chua Yvonne Lay-hong, Tan Ru San, Ding Zeepin *National Heart Centre Singapore*

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Table 1 Parameters in different age groups

	Group 1 (20–30 years) n=24	Group 2 (31–40 years) n=30	Group 3 (41–50 years) n=24	Group 4 (51–60 years) n=32	Group 5 (>60 years) n=26	p Value
SV-E (ml)	75.68±15.97	74.23±23.57	69.27±16.74	65.34±22.67	63.27±80.83	
NA SV-A (ml)	22.80±5.50**	23.06±9.04**	28.72±9.57	33.38±15.34	36.52±14.35**	<0.001
End of A-QRS (s)	−28.36±11.21*	−29.85±16.05*	−36.76±16.15	−40.21±13.32	−41.68±14.36*	<0.05
A dur (ms)	117.73±13.07*	119.26±11.74*	125.00±8.57	126.40±9.07	128.33±9.07*	<0.05
Ar dur (ms)	102.70±15.65*	103.20±15.20*	110.00±10.95	112.00±16.33	114.76±12.09*	<0.05
A dur – Ar dur (ms)	15.03±2.58*	16.06±3.46*	15.00±2.38*	14.40±7.26	13.57±2.01*	<0.05

*p<0.05, **p<0.001.

A dur, mitral flow A duration; Ar dur, pulmonary vein A duration; End of A-QRS, time interval between end of mitral A wave to onset of QRS of ECG; SV-A, stroke volume of A; SV-E, stroke volume of E.

Objective The aims of our study are to describe the time intervals between the end of transmitral flow A velocity and onset of QRS on the ECG, stroke volume of left atrium at end of T wave and onset of P wave on the ECG in normal subjects, and examine the effect of age on these parameters.

Methods Total of 138 normal healthy adults (22–78 years old) were enrolled. The transmitral flow E and A wave were recorded by Doppler echocardiography. The time intervals from the end of transmitral flow A velocity to the onset of QRS on the ECG, diameters of mitral annulus at the end of T wave and the onset of P wave on the ECG, VTI of the mitral valve E and A were measured. We calculated the SV of mitral valve E and A as formulas: $SV = 0.785 \times \text{diameter of mitral}^2 \times \text{VTI}$.

Results Shown in table 1.

Conclusions SV-A increased and the time intervals between the end of A wave to the onset of QRS decreased reflected the deterioration of left atrial conduit function and increased pump function due to reduced left ventricular diastolic function with age.