



Age as a determinant of risk factors and mechanisms in ischaemic stroke

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Ballarat **Health Services**
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Background & Objectives



Background:

- Stroke is the second leading cause of death, and third main cause of disability globally.¹
- 25% of ischaemic strokes occur in working-aged people in high-income countries, and around 10% of all ischemic strokes occur in those under 50 years of age. Epidemiological studies show an increase in the incidence of stroke at younger ages since the 1980s to present.^{1,2,3}
- Upper age limit for defining young strokes is unclear: WHO defines as under 65, studies vary between 45 and 55.^{2,4}
- Traditional vascular risk factors for ischaemic stroke in older people are also highly prevalent in the younger age groups with stroke.^{2,5}



Objectives & Methods



Aims:

1. Compare our young stroke patients to other regions in the world
2. Determine an appropriate age cut-off for young strokes (based on risk factors and mechanisms)

Study design:

- Retrospective analysis of the Australian Stroke Clinical Registry (AuSCR) data from Jan 2015 to December 2017 for patients admitted to Ballarat Health Services with acute ischaemic strokes
- We collected data on demographic profiles, risk factors and classified stroke using the Trial of Org 10172 in Acute Stroke Treatment (TOAST) criteria.

Analysis:

- Descriptive analysis for demographic data
- Pearson's chi square test when the assumptions were met; fisher's exact test when the assumptions were not met

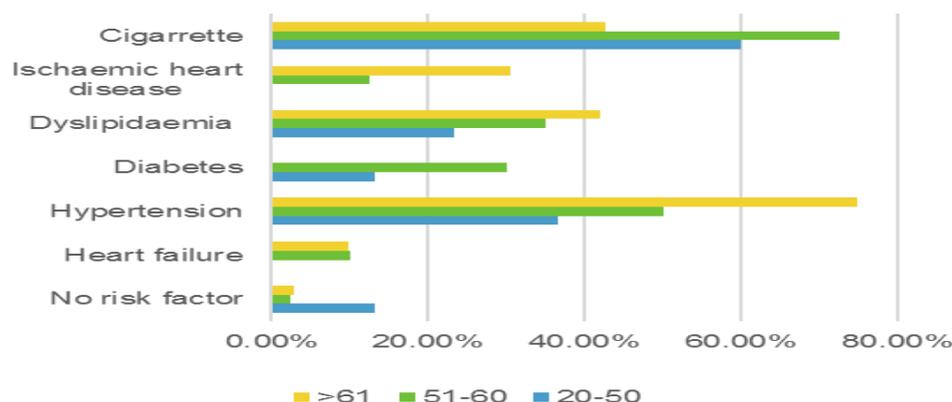


Results & Discussion



Age group	Numbers	Males	Females
18-≤50	30	16	14
51-≤60	40	26	14
>61	321	181	140
Total	391	223	168

Risk factors of stroke



Mechanisms of stroke by age

	18-≤50 (n=30)	51-≤60 (n=40)	>61 (n=321)	18-≤50 vs >61 (P value)	18-≤50 vs 51-60 (P value)	51-≤60 vs >61 (P value)
Large-artery atherosclerosis	2 (6.7)	9 (22.5)	60 (18.7)	0.132	0.1	0.528
Cardioembolism	7 (23.3)	11 (27.5)	139 (43.3)	0.035	0.78	0.062
Small-artery occlusion	8 (20)	9 (22.5)	58 (18.07)	0.624	0.54	0.82
Other determined origin	3 (10)	1 (2.5)	6 (1.9)	0.033	0.307	0.564
Cryptogenic	14 (46.7)	11 (27.5)	57 (18.1)	0.001	0.132	0.138

Bold values represent statistically significant values for the 18-≤50 vs >61 and 18-≤50 vs 51-≤60 groups, and statistical non-significance between 51-≤60 vs >61 group

MAJOR FINDINGS:

- Incidence of young strokes varies depending on age cut-off used
- Vascular risk factors highly prevalent in all age groups, but increase and manifest in associated mechanism in middle and older ages
- Rare causes were infrequent in our study even amongst younger patients
- Upper limit for young strokes, based on risk factors and mechanisms, should be 50.



References



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Thank You!
Any Questions?



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