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HEMORRHAGIC VERSUS ISCHEMIC RISK IN PATIENTS WITH ATRIAL FIBRILLATION ON HEMODIALYSIS

Mariana Sousa¹, Pedro Bravo¹, Cristina Santos¹, Aura Ramos¹ ¹Hospital Garcia de Orta, Almada, Portugal

Background and Aims: Patients with renal replacement therapy and atrial fibrillation (AF) have a particularly high risk of both stroke and bleeding, but no high-quality evidence-based recommendations exist to properly manage these patients. Therefore, we aim to evaluate the ischaemic versus the haemorrhagic risk in a hemodialysis (HD) population.

Method: We selected patients that started hemodialysis in our hospital between 2011 and 2015. Only incident patients that were on regular hemodialysis treatment for more than 3 months were considered. Both patients that already had AF before HD, or developed AF during the follow-up, were included. At the time of AF diagnosis or beginning of HD, the risk factors were analyzed based on CHA $_2$ DS $_2$ -VASC and HAS-BLED scores. The outcomes were hemorrhagic events (only the events that needed hospitalization were taken into account), ischaemic events (i.e. that result from embolic arterial ischaemia) and death related to any of these events.

Results: From 302 incident patients on hemodialysis, 46 (15.23 %) were included. Mainly man (65%), with a mean age of 75 ± 10 years old. Most of the patients (63%) already had AF when they started hemodialysis. There was no significant difference between the incidence of ischaemic and haemorrhagic events (p=0.219). Three patients died of an ischemic event and two of haemorrhagic shock. Twenty one patients (45.6%) started oral anticoagulation. No difference was found between the proportion of haemorrhagic events between patients with oral anticoagulation and patients with no anticoagulation (p=0.157). Similarly, oral anticoagulation was not associated with any effect on the incidence of ischaemic events (p=0.366). The results after adjustment for the risk factors included in the HAS-BLED and CHA2 DS2-VASC scores were the same.

Previous stroke, transient ischaemic attack or thromboembolic event significantly increased the risk of an ischaemic event, when adjusted to oral anticoagulation, age, diabetes, vascular disease and hypertension (OR 6.78, C.I 95% 1.236-37.278, p=0.028). This risk factor was not associated with an increase of haemorrhagic events. No other risk factor included in the scores was associated with any significant effect in the outcomes.

Conclusion: As we know, AF increases the risk of ischaemic events in general population. However, in hemodialysis patients, we didn't observe any difference between the incidence of ischaemic and haemorrhagic events. Therefore, the benefit of oral anticoagulation in such patients remains questionable. It is worth noting that patients with previous stroke, transient ischemic attack or thromboembolic event seem to have higher risk of new ischaemic events. In these patients, there may be some advantage in oral anticoagulation. Since this is a single center, retrospective, observational study, these results should be interpreted with caution.

Ischaemic events	p value	Odds ratio	95% C.I.	
			Inferior	Superior
Hypertension	,494	,396	,028	5,636
Diabetes Mellitus	,921	,923	,189	4,499
Previous stroke, transient ischaemic attack or thromboembolic event	,028**	6,789	1,236	37,278
Vascular disease	,349	2,257	,411	12,398
Anticoagulation	,448	,510	,090	2,901
Age>65 years old	,354	3,434	,253	46,584
Constant	,371	,169		

Figure: Impact of risk factors on is chaemic events. Abbreviations C.I: Confidence interval **p value < 0.05