



Introduction

Heart failure (HF) is one of the leading causes of both hospitalization and rehospitalization. Both direct and indirect mechanisms have been proposed to explain the relationship between HF and cognitive impairment. In addition to discussing the pathophysiology of this association and investigating the need for standardization of the tests used to screen for cognitive impairment, our review will discuss different treatment modalities that have been utilized to slow the degree and alter the effects of the impairment.

Pathophysiology

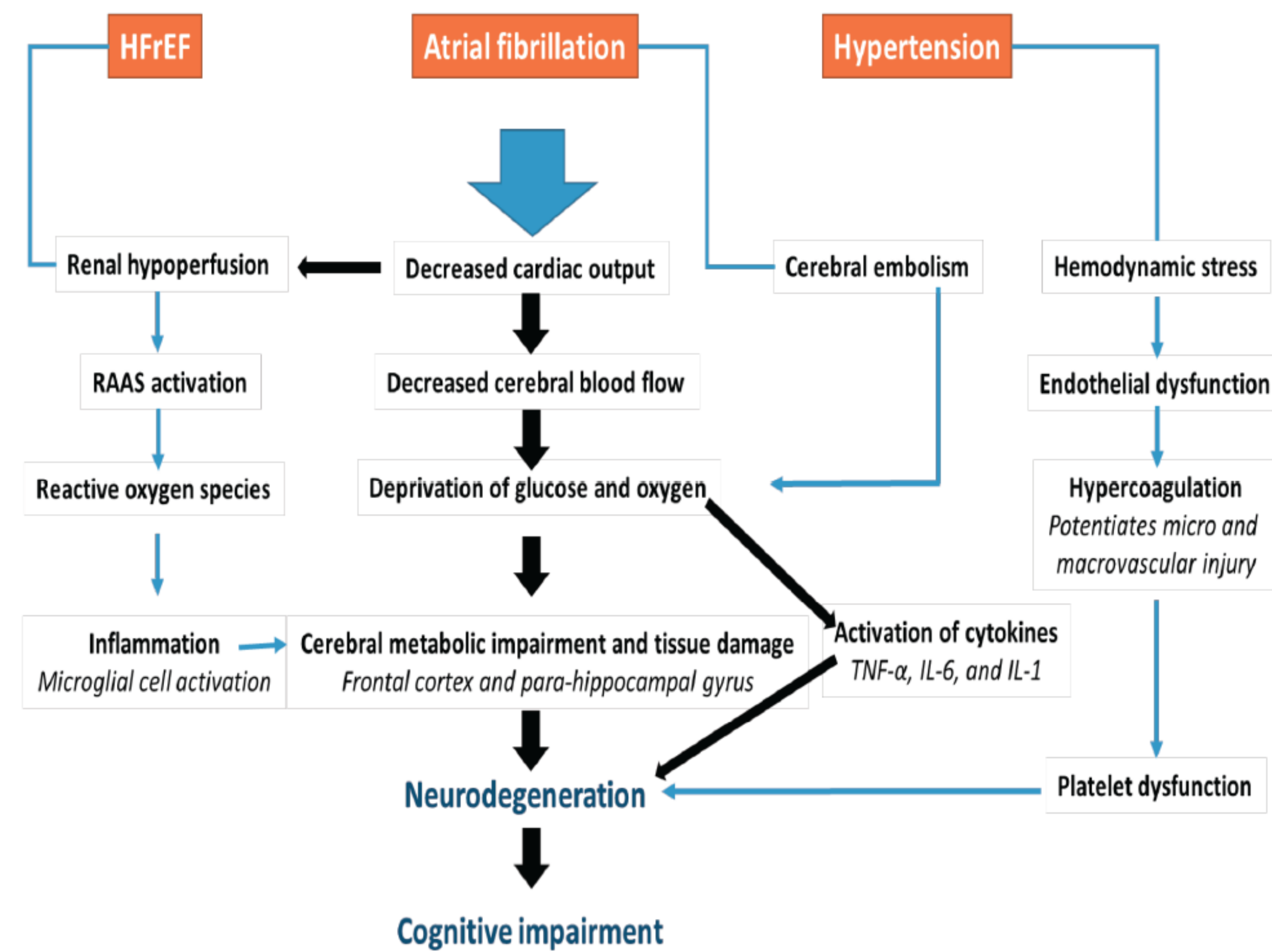


Fig. (1). Pathophysiology of cognitive impairment in heart failure. [1]

References

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2. Goh, F.Q.; Kong, W.K.F.; Wong, R.C.C.; Chong, Y.F.; Chew, N.W.S.; Yeo, T.-C.; Sharma, V.K.; Poh, K.K.; Sia, C.-H. Cognitive Impairment in Heart Failure—A Review. Biology 2022, 11, 179. https://doi.org/10.3390/biology11020179
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Method

Studies were identified by searching across 4 electronic databases, namely PubMed, Google Scholar, PMC, and Science Direct. The search was conducted for articles published from June 4th, 2013, through to June 4th, 2023. Articles were excluded by relevance, redundancy, and year of publication. Newcastle-Ottawa Scale, AMSTAR checklist, and SANRA checklist were used for the quality assessment of the articles.

Results

15 studies were selected for inclusion in the review. Mechanisms causing cognitive impairments are believed to be due to chronic hypoperfusion, small vessel disease, lacunar infarcts, and micro emboli. Therefore, most treatment modalities aim to enhance cardiac output and LVEF to potentially mitigate cognitive decline. The effectiveness and practicality of various screening tools differ, as indicated by their sensitivity, specificity, and the time required to administer them.

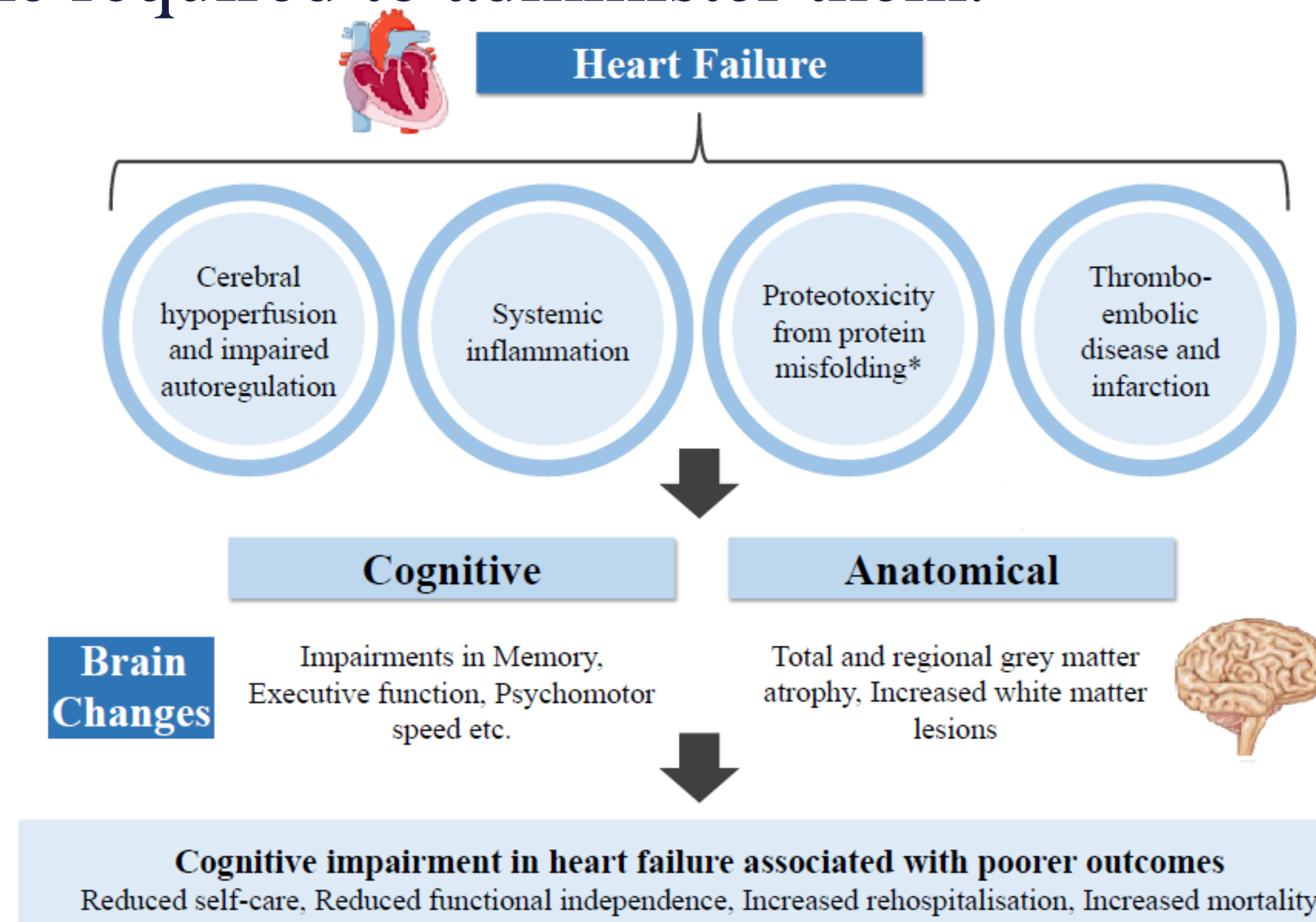


Fig. (2). Summary of the reported pathophysiology and brain changes. [2]

Conclusion

Heart failure comes with numerous complications, one of which is cognitive impairment. This review underscores the importance of preventing reversible causes of impairment. These outcomes include a heightened risk of unspecified dementia, Alzheimer's dementia, frequent hospital readmissions, and increased mortality. As the prevalence of heart failure and its associated cognitive impairment rises, it's imperative for all physicians to recognize and periodically screen for this complication.

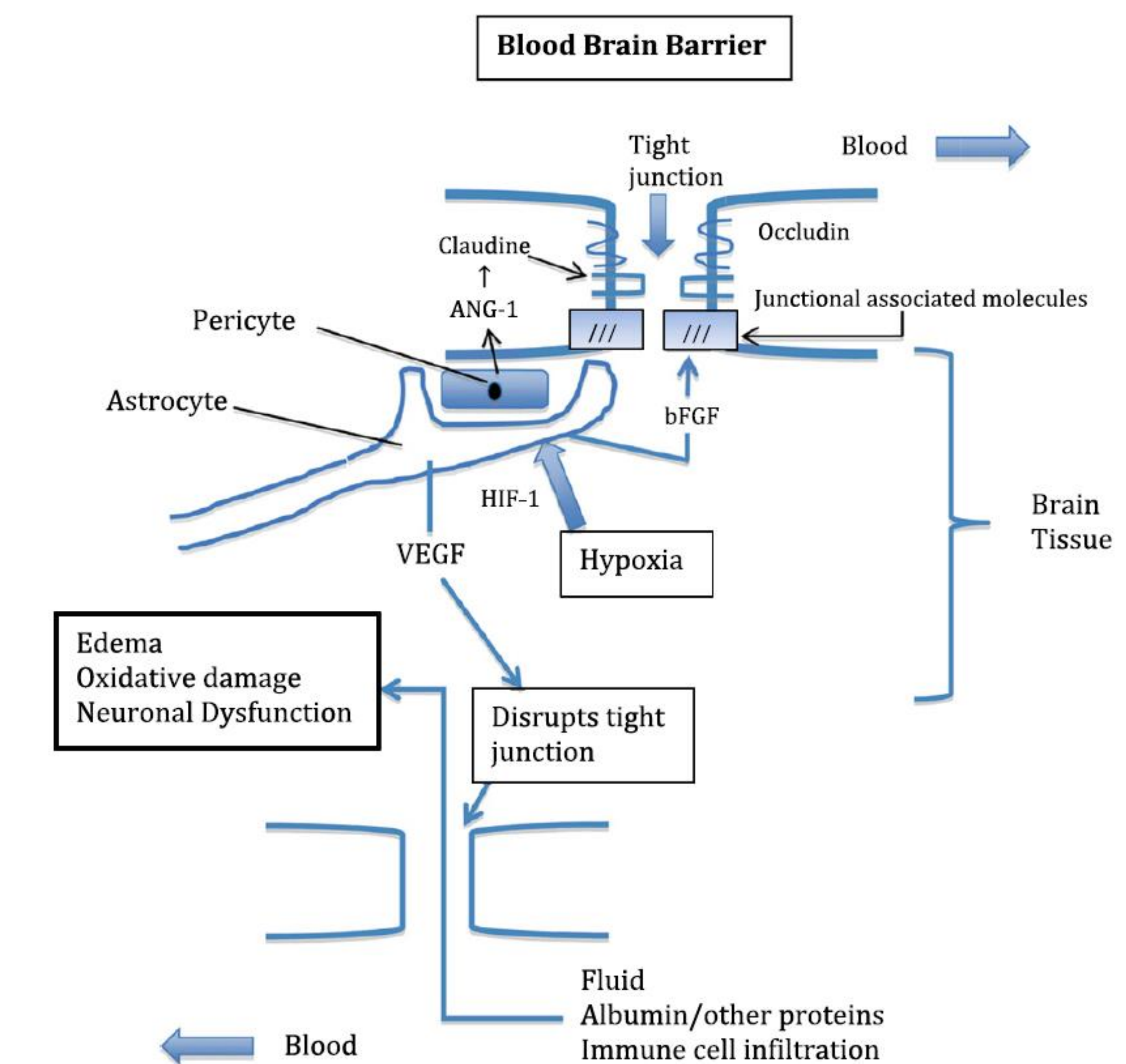


Fig. (3). Simplistic view of how hypoxia disrupts the blood brain barrier. [3]