INTRODUCTION

Stroke is one of the leading causes of mortality and morbidity worldwide and requires rapid and intensive treatment to prevent adverse outcomes. Decompressive hemicraniectomy stands as the gold standard for surgical resolution of the intracranial swelling which accompanies cerebral infarction; however, the benefits of this procedure are not as well achieved in the elderly (age >65 yoa) compared to the younger population.

METHODS

This is a critical review performed on all available literature relating to middle cerebral artery (MCA) stroke in the elderly with emphasis on articles examining causality of adverse outcomes in this group over younger populations. Utilizing PRISMA guidelines, we initially identified 1462 articles.

RESULTS:

Immunological, mitochondria, autonomic, and neuro-vascular changes were noted as shown in figure 1-4.

CONCLUSION

We conclude that physiological changes inherent in the aging process serve to intensify adverse outcomes that are commonly associated with strokes in the elderly. Identification and subsequent minimization of these risk factors could allow for more effective management of elderly patients, post stroke, and promote better clinical outcomes.

DISCUSSION

After screening, four clear areas of physiological change associated with aging were identified and expounded upon as they relate to MCA stroke. These four areas include: immunological, autonomic, mitochondrial, and vascular changes. Elderly patients have a decreased and declining capacity to regulate the inflammation that develops post infarction and this contributes to adverse outcomes from a neurological standpoint. Additionally, aging decreases the ability of elderly patients to regulate their autonomic system resulting in aberrant blood pressures systemically post infarction. With age, the mitochondrial response to ischemia is exaggerated and causes greater local damage in elderly patients compared to younger populations. Finally, there are numerous vascular changes that occur with age including accumulation of homocysteine and atherosclerosis which together contributed to decreased structural integrity of the vasculature in the elderly and render decreased support to the recovery process post infarction.

Disclosures:

Neither the author nor any of the supporting authors have any personal or financial relationships to disclose which pertains to the content of this presentation.