



ARE THERE GENDER DIFFERENCES IN MANAGEMENT AND PROGNOSIS AFTER STROKE?

Neurology

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ABSTRACT

In the literature gender differences in the pre-stroke condition, and management and outcome after strokes still are controversial. The mean age in the women with stroke is about 4-5 years older than in men and women are also more likely to suffer from a severe stroke. Several studies are focused on outcome and management after stroke. More studies are needed for elucidate the changes between stroke in men and women.

KEYWORDS

Gender, Stroke, Riks Stroke Registry.

INTRODUCTION -

In the literature gender differences in the pre-stroke condition, and management and outcome after strokes still are controversial. The mean age in the women with stroke is about 4-5 years older than in men and women are also more likely to suffer from a severe stroke. Several studies are focused on outcome and management after stroke. In general, women were more likely to be discharged to an institution, and women had a higher risk of disability and handicap at follow-up. These differences remained after adjustments for baseline factors. In contrast, no differences in case fatality were observed in several studies, one study found a more common in women, and more women often had atrial fibrillation [1].

GENDER DIFFERENCES IN MANAGEMENT AND PROGNOSIS AFTER STROKE-

Riks-Stroke is Swedish quality register for stroke patients in hospital. In Sweden, almost all stroke patients are treated in hospital. Annually around 25,000 stroke events are included into the database and with such a great number of strokes, it is possible to study different aspects of outcome and manage in stroke patients. In total, 80% of the patients are treated in stroke units in Sweden, with an equal proportion men and women. More men than women are fully conscious at onset, more women have been treated at nursing home or at home with support from community, although, there were now differences in ages below 75 years. The 3-month crude case fatality was higher in women than men (23% vs. 17%). The mean age in men is 5 years younger than in women [1].

Three month after stroke (in men and women independent in functional outcome and living home without support before the event) shows that more men were living at home after stroke, especially amongst the oldest old. In ages below 75 years an equal proportion men and women had received rehabilitation and support. More women than men felt depressed 3 months after stroke, also more women received treatment for depression after stroke [1].

The most common biological explanation for sex differences in stroke is related to sex steroid hormones, particularly oestrogen. This hypothesis is supported by robust sex differences in animal models of ischaemic stroke. For example, after middle cerebral artery occlusion in rodents, females have smaller stroke volumes than have males. However, ovariectomised females have similar stroke volumes to males, whereas volumes in ovariectomised females given oestrogen replacement are similar to intact females [2,3]. Oestradiol has very potent effects on endothelia that promote dilation and blood flow, whereas testosterone has the opposite effects [4]. Similarly, cerebrovascular reactivity is the most robust in premenopausal women, but postmenopausal women have poorer responses than age-matched men. Post-menopausal women receiving oestrogen replacement therapy have reactivity responses similar to premenopausal women [5].

Sex differences in the response to injury and cell death have been

shown without the direct influence of sex steroid hormones. For instance, marked sex differences have been observed in cultures of XX (i.e. female) and XY (i.e. male) cells tested in steroid-free media in vitro. XY cultures seem to be more susceptible to excitotoxic cell death, whereas XX cells are more sensitive to pro-apoptotic (programmed) cell death [6]. These findings suggest that the development of new neuroprotective drugs should account for the possibility of sex differences in the mechanism and response to stroke injury. Future research should consider the importance of the neurovascular unit and the signaling processes that occur among the glia, neurons, and endothelium components [6].

CONCLUSION -

In conclusion, women appear to have a more unfavorable functional outcome after stroke, which is not completely explained by differences in age, stroke severity, or risk factors. More studies are needed for elucidate the changes between men and women [1].

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