No Sense of Coherence
An Odd New Risk for Stroke?

Michael Brainin, MD; Jaakko Tuomilehto, MD, MPolSc, PhD

W hen making a diagnosis of stroke, a physician should ask the patient how he experienced his deficit. Most patients, if not impaired by speech or memory, will give a straightforward account of their surprising and miserable experience of having felt a sudden motor or sensory loss, distressing weakness, or alarming loss of vision or of coordination. Interestingly enough, many patients also include in their story why they think this has happened to them. Often they report that they had recently endured much ‘stress’, and whatever their own personal definition for this might be, it will often be connected to a life-event, such as loss of job, loss of a spouse, or any other personal unhappy (or, much more rarely, happy) event.

Although stroke physicians empathically listen to such explanations by the patient, they do not overtly take these subjective causalities as an indicator of a stroke risk. If stressful events persist, physicians might offer general advice enabling the patient to increase his empowerment such as joining self-help groups or using community support.

But ‘stress’, or rather the lack of personal and social ability to cope with it, is now about to enter the arena of major risk factors for stroke. The ability of perceiving and handling one’s own distressing events has been called ‘sense of coherence’ and was based on the observation on survivors from concentration camps who had survived retaining their senses (of coherence) was based on the observation on survivors from concentration camps who had survived retaining their senses (of coherence) and abilities (of social empowerment).

This concept was now tested as a risk factor for stroke by Surtees et al from a large cohort in Norfolk, UK. In 20 629 persons aged 41 to 80 years, which they observed for >7 years, 452 strokes occurred. A weak sense of coherence was strongly and independently related to stroke occurrence with a rate ratio of 0.76 (95% CI, 0.60 to 0.96) as opposed to those with a strong sense of coherence. This influence was somewhat lessened but still remained significant when adjusted for the frequently known risk factors including hypertension, diabetes, previous myocardial infarction, and others. When including also obesity, social class, education as well as hostility and depression scores, the rate ratio still remained significant, measuring 0.89 (0.81 to 0.98). The authors conclude that capacity to adapt to stressful events may play a role as an etiologic risk factor for stroke.

Although such a clear and significant result probably has clinical importance, many questions remain unanswered. First, the sense of coherence concept was developed as an interactive concept for a health model. Whether it is suitable as a model for measuring the presence or extent of disease and has value as an outcome measure still has to be shown in validation studies. In the Swedish MONItoring Cardiac diseases (MONICA) study a decline of sense of coherence was seen in persons with identified disease and older age, but a specific influence on disease was not looked for. In other words, the presence or absence of the social ability of adapting to social adversity can only be taken as circumstantial evidence but not as proof of causality for its existence as an independent risk factor for stroke.

Second, if the sense of coherence takes on the role of a risk factor for stroke, then clinical or population trials aiming at prevention of such a risk factor must be envisaged, using a clear definition of what the intervention should be and how it should be applied. No such models for interventions exist to date, but it might be possible to design such.

Third, some limitations and imprecisions result from the study itself. Although only a 3-item questionnaire was used, others propagate an extensive 29-item or at least a 13-item version. It would also be useful to see the relation to other outcomes including mortality, coronary heart disease, and cancer. Furthermore, reporting a dichotimized outcome (high or low sense of coherence) gives less evidence than a continuous model showing a threshold effect. One of the aspects of the causality is a graded association—in this study the association was not graded, and thus inferences about the causal relation cannot be made. Finally, when postulating that adaptation to social adversity results from a high sense of coherence, some more explanatory steps of such a concept are necessary. On the other hand, if by using a 3-item questionnaire only the prediction of stroke risk can be significantly improved, its clinical applications are warranted.

In spite of such limitations, it will be worthwhile to further study the ability of coping with social adversity and to define the resulting resiliency to vascular diseases. Future studies will have to show whether this new, odd risk factor will finally go into the arena of the other major contributors of stroke.

Disclosures
None.

References


**Key Words:** risk factors, stress, stroke epidemiology, stroke outcome