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CRITICAL ANALYSIS OF PROGNOSTIC FACTORS FOR *PAKSHAGHATA* VIS-A-VIS STROKE

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ABSTRACT

Prognosis is an important aspect of diagnosis and treatment. From ancient time predicting prognosis has always been a big challenge to the medical profession. Patients want to have access to accurate prognostic information. Knowing prognosis plays an important role in end of-life decisions and it helps to determine whether it makes more sense to attempt certain treatments or to withhold them. Improved prognostication may facilitate better patient care, giving patients the ability to make better informed choices about treatment. On the other hand, it may help patients to make better use of the time remaining to them, and may give them the opportunity to make appropriate preparations for their own impending death. So in this article prognostic factors related to Pakshaghata (stroke) are analysed.**KEYWORDS**: Prognosis, *Pakshaghata*, Stroke.

INTRODUCTION

If we look into *Ayurvedic* texts then we will find that art of prognosis was well developed in ancient times. A separate section in the form of *Arishta Lakshana* (sign and symptoms related to prognosis) is devoted in many *Ayurvedic* texts. In 16th century *Taila Bindu Pariksha*[1] (Oil Drop Method) a urine test for knowing prognosis was popular. The incidence of stroke reveals the fact that worldwide, 15 million people suffer a stroke each year; one-third die and one-third are left permanently disabled. The global burden of disease study projects that total deaths from stroke in India will surpass established market economies by year 2020.

A physician should have clear idea regarding the prognosis of the disease before starting the therapy. He should know whether the disease is *Sadhya* (curable*), Kashta Sadhya* (Difficult

to treat*)*, *Yapya* (Persistent for lifelong) or *Asadhya* (Incurable*)*. Good results are obtained in *Sadhya Vyadhi*, but if the physician undertakes the treatment of *Asadhya Vyadhi*, he will suffer loss of money and will tarnish his learning and fame.[2]

1. Assessment of Prognosis by *Taila Bindu Pariksha* of urine of the patient

In this method Petri dish was filled with urine and test was performed when urine surface becomes calm & quiet. Test was performed with in one and half hours of collection to get the accuracy of result.When urine surface becomes quiet, a oil drop (Tila Oil) was dropped with micropipette on the surface of urine. Grid was used as background (i.e. comprising of white squares over brown background). Lines were used as indicator of direction and area covered by oil film was counted by the blocks. The direction of spread, shape of spread, spread time, area covered; split time was recorded for Analysis.

Shape of spread: The texts have described various shapes for good as well as bad prognosis using Sanskrit terminologies prevalent at that time.

Shapes showing good prognosis (*sadhya* conditions): *Hansa, Karanda, Tadaga, Kamala, Gaja, Chamara, Chhatra, Torana, Harmya, Parvata, Vriksha and Matsya.*

Shapes showing grave prognosis (*asadhya* conditions): *Hala, Kurma, Sairibha, Shiro Vihina Nara, Gatra Khanda, Shastra, Khadga, Mushala, Pattisha, Shara, Laguda, Trichatushpatha, Khara, Ushtra* and *Vrishchika*.

On interpretation of the above mentioned shape described in various texts, it was observed that the shape which is circular or oval indicates good prognosis whereas the shape which was linear, or circular with many projections indicate bad prognosis.

Direction of spread: *Yogaratnakara, Yogatarangini* and *Vangasena Samhit* have described the spread in east, west and north direction as showing good prognosis. Similarly, spread in all directions and in south direction in case of only *jvara* has also been related to good prognosis.

The spread in all diagonal directions i.e. North – East (*Ishaana Kona*), North – West (*Vayavya Kona*), South – East (*Aagneya Kona*), South – West (*Nairitya Kona*) and also South ward spread (only by *Vangasena Samhita*) has been described to show grave prognosis.

2. Assessment of prognosis by analysing symptoms observed in the patient

Various symptoms are mentioned in Ayurvedic texts indicating prognosis. These are summarised below.

Acharya Charaka

While explaining the *Sadhyasadhyata* of *Vata Vyadhi* including *Pakshaghata* has mentioned that these diseases may or may not cured even after careful treatment because of the *Asthimajjagata Avastha* of the diseases and their deep seated nature. But if these diseases occur in strong persons and are of recent origin and without any complications, should be treated by the physician.[3]

Sushruta and Vagbhata

They mention *Vata Vyadhi* under *Mahagada (*Major diseases*)* and according to them all the *Mahagada* are *Dushchikitsya (*Difficult to treat) by nature.[4,5] *Pakshaghata* being a *Vata Vyadhi* is also considered as *Dushchikitsya.*

- **According to *Sushruta*[6]**
- *Pakhaghata* resulting from *Vata* alone (without *Anubandha*) is *Krichhra Sadhya* (curable with much difficulty).
- Resulting from *Anubandha* of *Pitta* and *Kapha* is *Sadhya* (curable).
- *Pakshaghata* presenting after *Kshaya* is *Asadhya* (incurable).

***Gayadasa* interprets the word *Kshaya* and says that *Kshaya* may be of two types**

- Caused by excessive bleeding is *Asadhya.*
- Caused by excessive exercise like wrestling is *Kashtasadhya.*

Acharya Sushruta has emphasized that after one year the disease should not be treated because it comes under *Asadhya* category. *Arishta Lakshanas* of *Vata Vyadhi* in general have been described by *Acharya Sushruta*. Patients with swelling, loss of sensation, fractures, *Karnpa, Aadhmana*, etc., are killed by *Vata Vyadhi.*[7]

According to *Vagbhata*[8]

- *Pakshaghata* caused by *Shuddha Vata* is *Krichhra Sadhyatama* (*Atikrichhasadhya-Indu*).
- *Pakshaghata* caused by *Samsrushta Dosha* is *Krichhra Sadhya*.
- *Pakshaghata* caused by *Kshaya is Asadhya*.

***Madhavkara*[9] *and Bhavmishra*[10]**

Both have the same opinion as that of *Sushruta*. In addition they have described that *Pakshaghata* occurring in *Garbhini, Sutika, Bala, Vruddha, Kshina*, accompanied by *Vedana Nasha* should not be treated. *Pakshaghata* caused by excessive bleeding should also be avoided.

Kalyankaraka

In this it is mentioned that *Pakshaghata* caused due to *'Kshata'* is *Asadhya* (*Vata Rogadhikara*).

Yogratnakar

By *Devyoga Vata Vyadhi*, which are generally *Asadhya* can sometimes become *Sadhya*.

9. Prognostic factors in stroke[11]

Ischemic Stroke-

In the Framingham and Rochester stroke studies, the overall mortality rate at 30 days after stroke was 28%, the mortality rate at 30 days after ischemic stroke was 19%, and the 1-year survival rate for patients with ischemic stroke was 77%.

- Prognosis after acute ischemic stroke varies greatly in individual patients, depending on the stroke severity and on the patient's premorbid condition, age, and post stroke complications.
- A study utilizing the large national Get With The Guidelines - Stroke registry found that the baseline National Institutes of Health Stroke Scale (NIHSS) score was the strongest predictor of early mortality risk, even more so than currently used mortality prediction models incorporating multiple clinical data. Cardiogenic emboli are associated with the highest 1-month mortality in patients with acute stroke.
- The presence of Computed Tomography (CT) scan evidence of infarction early in presentation has been associated with poor outcome and with an increased propensity for hemorrhagic transformation after fibrinolytic therapy.Hemorrhagic transformation is estimated to occur in 5% of uncomplicated ischemic strokes in the absence of fibrinolytic therapy, although it is not always associated with neurologic decline. Indeed, hemorrhagic transformation ranges from the development of small petechial hemorrhages to the formation of hematomas requiring evacuation.
- Acute ischemic stroke has been associated with acute cardiac dysfunction andarrhythmia,

which then correlate with worse functional outcome and morbidity at 3months. Data suggest that severe hyperglycemia is independently associated with poor outcome and reduced reperfusion in fibrinolysis, as well as extension of the infarcted territory.

In stroke survivors from the Framingham Heart Study, 31% needed help caring for themselves, 20% needed help when walking, and 71% had impaired vocational capacity in long-term follow-up.

Hemorrhagic Stroke

The prognosis in patients with hemorrhagic stroke varies depending on the following parameters.

- Severity of stroke.
- Location and the size of the hemorrhage.
- Lower Glasgow Coma Scale (GCS) scores are associated with poorer prognosis andhigher mortality rates.
- A larger volume of blood at presentation is also associated with a poorer prognosis. Growth of the hematoma volume is associated with a poorer functional outcomeand increased mortality rate
- Other prognostic factors include the following:
- Non aneurysmal peri-mesencephalic stroke has a less severe clinical course and ingeneral, a better prognosis.
- The presence of blood in the ventricles is associated with a higher mortality rate; in one study, the presence of intraventricular blood at presentation was associated with a mortality increase of more than 2-fold.
- Patients with oral anticoagulation-associated intracerebral hemorrhage have higher mortality rates and poorer functional outcomes.

In studies, withdrawal of medical support or issuance of Do Not Resuscitate (DNR) orders within the first day of hospitalization predict poor outcome independent of clinical factors. Because limiting care may adversely impact outcome, American Heart Association/American Stroke Association (AHA/ASA) guidelines suggest that new DNR orders should probably be postponed until at least the second full day of hospitalization. Patients with DNRs should be given all other medical and surgical treatment, unless the DNR explicitly says otherwise.

Stroke scales[12] are used in clinical research to summarize the deficits found in groups of patients. In individual patients, stroke scales are useful to document and communicate baseline deficits, as well as changes over time, with other members of the health care team and to provide prognostic information. Most recent studies used the National Institutes of Health Stroke Scale (NIHSS) to assess baseline stroke severity.[13]

The modified Rankin Scale (mRS)[14] is a commonly used scale for measuring the degree of disability or dependence in the daily activities of people who have suffered a stroke or other causes of neurological disability and it has become the most widely used clinical outcome measure for stroke clinical trials.

These scales are mainly described in reference to prognosis of single disease and also their clinical validation is available by which accurate prognosis can be predicted for chronic diseases and in addition to diagnostic research, a renewed focus on prognosis can be predicted for chronic diseases.

Stroke scales are used in clinical research to summarize the deficits found in groups of patients. In individual patients, stroke scales are useful to document and communicate baseline deficits, as well as changes over time, with other members of the health care team, and to provide prognostic information. Scales are even more useful for research to assure that stroke severity is balanced between groups and to provide an outcome measure of disability. The ideal clinical stroke scale, which does not yet exist, would be simple, easy, and quick to administer; have high reproducibility by one observer and between observers, and give useful prognostic information.

The ideal outcome scale would have all of these features, and measure disability in a way that is important to patients and their quality of life.

Most recent studies used the National Institutes of Health Stroke Scale (NIHSS) to assess baseline stroke severity. The Canadian Stroke Scale (CSS) and the Scandinavian Stroke Scale (SSS) also have been used in many trials and share some features with the NIHSS. The Oxfordshire Classification is the simplest scale, and also is used in research to both classify stroke and approximate its severity.

In addition to deficit scales, there are several validated outcome scales to assess disability following stroke; the most commonly used are the modified Rankin Scale (mRS), the Barthel

Index(BI), and the Glasgow Outcome Scale (GOS).

DISCUSSION AND CONCLUSION

After analysing both aspects of prognosis i.e. *Ayurveda* and modern it can be concluded that in *Ayurveda* prognosis assessment is based on *Taila Bindu Pariksha* and symptoms observation. There is a strong need for re-establishing these features. We can also make scales for objective assessment of prognosis as in the modern medicine. By doing this we can contribute for better future of *Ayurvedic* prognostic methods.

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