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A COMPARATIVE STUDY ON ASSESSMENT OF CRITICAL ILLNESS

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ABSTRACT :

Critical illness is a condition associated with many variables and unpredicted factors. In critical illness assessment of prognosis is required for prompt intervention. Ayurveda explains about prognosis by many aspects like *sadhyasadhyatha* of *vyadhi, arista lakshana, ojokshaya etc.* contemporary medical system has developed and validated many scoring system for assessment of prognosis in critically ill patients. Comparison of prognostic criteria in critically ill patients between Ayurveda methods and the modern methods of assessment.

50 critically ill patients were selected and assessed through Ayurvedic and contemporary understanding.Among critically ill patients maximum patients are from age group of 68 to 70 years i.e.40% which is belonging to *vrudha vaya.* In all patients *bahudosha-dushya* relations is noted. The 62% patients were showed *ojo vyapath lakshana.* Maximum of 40% patients score <7 points of GCS. Maximum of 46% patients score between 11-20 points of APACHI-II scoring system.

Conclusion : In all critically ill patients *bahudosha-dhushya* relations are observed with the expression of predominant *dosha* and *dhushya lakshana*. The assessment of *dosha, dushya, srothas, rogamarga, ojas, jnanendriya, karmendriya* and *arishta lakshana* in critically ill patients holds good even in present scenario.

Key words: *sadhyasadhyatha, ojokshaya,*

INTRODUCTION: Man always wishes to predict the future and it is true even with medical system. Prognosis is the prediction of the course of a disease and frequency with which they can be expected to occur. A complete prognosis includes the expected duration, description of course of disease, such as progressive decline, intermittent crisis, sudden and unpredictable crisis[1]. Predicting the prognosis in critically ill patients is very crucial and challenging to physician because it includes many unpredictable factors and variables.

Ayurveda explains about prognosis by many aspects like *sadhyasadhyatha* of *vyadhi, arista lakshana, ojokshaya etc. Trividhapariksha, Dashavidhapariksha, Dvadashapariksha and Astavidhapariksha are* different tools for diagnosis and prognosis of disease. Prognosis of disease mainly depends on available treatment protocol at given time.

Contemporary medical system uses many scoring system to asses and predict the prognosis. Numerous severity-of-illness (SOI) scoring systems have been developed and validated over the last two decades. Although these scoring systems have been validated as tools to assess populations of critically ill patients, their utility in predicting individual patient outcomes is not clear

Assessment of prognosis is needed to facilitate the clinical decision making for choice of proper treatment. The prediction of prognosis helps in patient and family education and counseling.

OBJECTIVES OF THE STUDY:

- Comparison of prognostic criteria in critically ill patients between Ayurveda methods and the modern methods of assessment.

AYURVEDIC EXPLANATION ON CRITICAL ILLNESS: On the basis of prognostic criteria, *vyadhi* are divided in to *sadhya* and *asadhya. Asadhya* is again divided in to *yapya* and *pratyakhyeya*[2]. *pratyakhyeya* are those diseases which are definitely incurable and there is a no chance for prolonging or stopping the detoriation of condition leading to death.

Characters of *Pratyakhyeya vyadhi*:

Pratyakhyeya means incurable, *Pratyakyan* refers to rejection[3].

Kriyapatham athikrantham[4]:Every protocol of medicine have their own limitation. If disease crosses the boundary line of all treatment protocol then it has to be considered as *pratyakhyeya vyadhi*. when treatment choices like *shamana* or *shodhana, santharpana* or *apatharpana, shadvidhopakrama, Dhanvathari sampradhaya chikithsa* like *kshara, agni, shastra karma, mantra, homa, bali* like *diava vyapashraya chikithsa* fail to treat such diseases then such conditions have to be considered as considered as *pratyakhyeya vyadhi*.

Sarva margaanusarin[4]**:** There are 3 *marga* for *vyadhi* they are *bahya, abhyantara*, and *madhyama*. They are also called as *shakha, koshtha* and *marmasthisadhi* respectively. If diseases extend to all routes or vitiates all routes then it has to be considered as *pratyakhyeya*.

Outhsukya, Arathi, Moha[4]:The *pratyakhyeya roga* will have the effect on *manas* and will show the symptoms like *Outhsukya, Arthi* and *Moha*. *Outhsukya* means *Avicharaya karya pravruthi* i.e irritability. *Arathi* means *Asukam* i.e discomfort and *Moha* is loss of differentiation between *sukha* and *dukha*.

Indriyanasha[4]**:**The disease which causes the impairment of *arthagrahana* of *jnanedriya, karma* of *karmendriya* and *chinthya, vicharya, Uhya, dheyam, sankalpa* like functions of *manas* then it can be considered as *pratyakhyeya vyadhi*.

Durbala rogi and susamvrudha vyadhi[4]*:*Disease become incurable when patient is severely debilitated and features of disease is in a most advanced state.

Roga bala may be more due to the involvement of *tridosha, gambhira dhathu, mala, marma* and *ojas*, if *roga* crosses all *kriya kala* and reaches the stage of *Bheda avastha* then it may become incurable.

Arishta[4]**:**If *arishta lakshana* are seen in the patient then it must be considered as *prathyakeya vyadhi*. However care must be taken to rule out *rishtabhasa* by precise observation of terminal signs and symptoms.

Arishta vijnana:The concept of *arishta* is unique contributions of Ayurveda to medical science. *Arishta lakshana* are those signs and symptoms indicating the definite bad prognosis of disease or indicators of death. Before going to start treatment of any disease physician should assess for *Arishta lakshana. Charaka* contributed a separate *sthana* for assessment of *arishta lakshana* as *Indriyasthana.*

Factors to be examined for assessment of *Arishta*[5]:

Varna,swara,gandha,sparsha,chakshu,srothra,ghraana,rasana,sparshana,mana,bhakthi,shuocha,sheela,achara,smruthi,aakruthi,prakruthi,bala,medha,harsha,ruksha,sneha,tandra,gourava,laghava,ahara,vihaara, aaharparinama,upaya,apaya,Purvaroopa,

rupa,vedhana,upadrava,chaya,prthishchaya,swapna,dhuthaikar,bheshyaja.

Duration specific *arishta*, Disease specific *arishta*, *arishta* related to *purva rupa* are explained in *Indriya sthana* of *Charaka samhitha*.

Assessment of Severity of Illness[6]: Currently, the most commonly utilized scoring systems are the APACHE (acute physiology and chronic health evaluation) system and the SAPS (simplified acute physiology score) system. These systems were designed to predict outcomes in critical illness .APACHE-II is specially designed scoring system for assessment of critical illness. It is comprised of physiology score, Glasgow coma score and score of chronic history. The maximum score is 71. A score of 25 represents a predicted mortality of 50%, score of over 35 represents a predicted mortality of 80%. The APACHE severity score has shown a good calibration and discriminatory value across a range of disease processes, and remains the most commonly used international severity scoring system worldwide.

METHODOLOGY: It is a Clinical observational study. 50 critically ill patients are selected. A special case record form is prepared with Ayurvedic and contemporary understanding of assessment of critical illness and observations were documented.

OBSERVATIONS:

1) Age wise distribution of 50 critically ill patients.Table no-1:

Age group in years	No of Patients	Total Percentage
23-27	1	2%
28-32	0	0%
33-37	2	4%
38-42	1	2%
43-47	1	2%
48-52	2	4%
53-57	4	8%
58-62	9	18%
63-67	10	20%
68-70	20	40%

2) *Ojasvikruthi* wise distribution of 50 critically ill patientsTable no- 2

Vikruthi	No of pts	Percentage
Visramsha	2	4%
Vyapath	31	62%
Kshya	17	34%

3) Distribution of 50 critically ill patients according to involvement of *Manas.*

Table no-3

Manas	No of pts	Percentage
Prakruth	21	42%
Vikruth	2	4%

Not elicited	27	54%

4) Distribution of 50 critically ill patients according to involvement of *srothas*

Table no-4

Srothas	**No of pt**	**Percentage**
Pranavaha	22	44%
Udhak	7	14%
Annavaha	3	6%
Rakathavaha	2	4%
Majjavaha	16	32%

5) Distribution of 50 critically ill patients according to involvement of *jnanendriya*

Table no-5

Involvement	**No of pts**	**Percentage**
Prakruth	20	40%
Vikruth	30	60%

6)* Distribution of 50 critically ill patients according to involvement of *karmendriya.

Table no- 6

Involvement	**No of pts**	**Percentage**
Prakruth	12	24%
Vikruth	38	76%

7) APACHE-II Physiology score wise distribution of 50 critically ill patients

Table no-7

Score	**No of patients**	**Percentage**
0	7	14%
1	5	10%
2	11	22%
3	10	10%
4	8	16%
5	4	8%
6	4	8%
7	1	2%

8) Glasgow coma scale wise distribution of 50 critically ill patients

Table no-8

Score	**No of pts**	**Percentage**
<3	10	20%
4-7	10	20%
8-10	6	12%
>11	24	48%

9) APACHE-II Age score wise distribution of 50 critically ill patients
Table no-9

Score	No of pts	Percentage
0	3	6%
2	6	12%
3	9	18%
5	32	64%

10) APACHE-II Chronic health score wise distribution of 50 critically ill patients
Table no-10

Score	No of pts	Percentage
5	44	88%
0	6	12%

11) Total APACHE-II Score wise distribution of 50 critically ill patients
Table no-11

Score	No of pts	Percentage
1-10	5	10%
11-20	23	46%
21-30	22	44%

DISCUSSION:

Age: Among critically ill patients maximum patients are from age group of 68 to 70 years i.e.40% which falls under *vriddha vaya*. *Kshaya* of *dhathu* and *vataprakopa* in *vriddhaavastha* is major cause for illness in *vriddhaavastha*. The *vriddhavaya* is considered as one of the criteria for *asadhyatha* of *vyadhi*. The life expectancy of humans in *kali yuga* is limited to 100 years. The statistics show that high incidence of critical illness and mortality in India ranges above 60 years. The non communicable diseases like Diabetes mellitus, Cerebrovascular accidents, Cardiovascular diseases and Carcinomas are most common in elderly old patients. The communicable diseases like Pneumonia by different bacteria, Tuberculosis, Urinary tract infections are major cause for sepsis in old patients.

The APACHE-II contains age score, among 50 critically ill patients maximum 32 patients are from age group of 65-74 i.e. 64% this group scores 5 in APACHE-II score which contributes to predict critical condition of patient.

Dosha and Dushya:

In any critical illness *thridosha prakopa* is main character, but single *dosha* can express dominantly. Among 50 critically ill patients, maximum i.e 74% cases had predominant expression of *vata dosha*. *Bahudosha-Dushyasamurchana* is another main feature of critical illness. In 50% of cases rasa expressed the symptoms like *gaurava,tandra,agninasha,shosha* etc.

Ojo vikruthi: among 50 critically ill patients 62% have *ojo vyapth* with symptoms of *stabda guru gatrata,tandra* and *nidra.*

Involvement of *manas*: Most of patients are unconscious so assessment of *manas* in critically ill patient is difficult. 54% patients *manas* is not elicited. Other 46% patients have *samja, smruthi* and *chesta vibhram.*

***Srothas*:** Multiple *srothas* are involved in critical illness. Among 44% *pranavaha srothas* expressed the *dushti lakshana* dominantly.

Involvement of *jnanendriya*: Among 50 critically ill patients 60% people have *vikruthi* of *jnanedriya*. When patient is in critical illness his sensory perception like sound, touch, smell, tactile and visual are impaired. Assessment of *indriyaabhigata* or *abhitapa* will help for predicting the outcome of illness.

***Karmendriya*:** Among 50 critically ill patients 76% had *karmendriya vikruthi*. The motor disability is most common in critical illness. The motor apheasia, neurological deficit of limbs, incontinence of bowel and bladder are observed as *karmendriya vikruthi* in this study.

Total physiology score: Total physiology score is sum of all the parameters indicating of physiological functions of body. In this study due to non availability, arterial pH is not assessed and it is excluded from score. Among 50 patients maximum i.e.22% patients are scored 2. Even though in critically illness patients physiological functions changes drastically but present treatment protocols like antipyretics, B-blockers, IV electrolyte supplements like 3% NS, injection KCl, bronchodilators, nebulisations, artificial high pressure oxygenation by mechanical ventilators may stop the detoration of physiological functions of body, but these are not disease targeted treatment. By these modes of treatment physiological detoriation can be withheld there by getting the time for treatment of main cause of illness.

Glasgow coma scale: GCS is major indication of CNS impairment. 40% patients scored <7 which shows the critical illness. GCS is comprised of eye movement, verbal response and motor response to external stimuli like verbal command, touch, superficial and deep pains. GCS scale can be compared with *jnanendriya* and *karmendriya pariksha*.

Chronic health score: The chronic history of any illness have role in predicting the prognosis of critically ill patients. In the APACHE-II scoring system 5 points are given for history of chronic illness or for admissions other than elective and emergency surgery. In 50 critically ill patients, maximum 88% scored 5 and remaining 12% scored 0, because of no significant previous history.

Total APACHE-II score: It is sum of physiology score, Glasgow coma score and score of chronic health. Maximum 46% patients scored between 11-20 points. The score more than 30 is having predicted mortality of 80%. In present study mortality prediction cannot be generalized because follow up of patients are not done.

CONCLUSION:

- Prediction of the prognosis in critically ill patients is very crucial and challenging to physician because it includes many unpredictable factors and variables. Most common conditions causing critical illness are shock, multi organ failure, sepsis, respiratory failure, renal failure, cerebrovascular and cardiovascular diseases.
- Critical illness can be considered as *pratyakhyeya vyadhi*. *PratyakhyeyaVyadhi* is the one which has crossed the boundary of all treatment protocol and extended to all *rogamarga.pratyakhyeya Vyadhi* mainly shows the signs and symptoms like *Outhsukhya, Arathi, Moha,Indriyanasha and Arishtalakshana.*
- In all critically ill patients *bahudosha-dhushya* relations are observed

with the expression of predominant *dosha* and *dhushya lakshana*. Preliminary *srothodusti* is extended to multiple *sroths* which shows the *pratyakhyeyatha* of *vyadhi*.

- In APACHE-II scoring method maximum i.e. 22% patients are scored 2 for physiology score, 40% patients scored <7 for Glasgow coma score and maximum 5 points are recorded for chronic health score. Maximum 46% patients total APACHE-II score was in between 11-20 points. This score mainly affected by treatment interventions like administration of anti pyretic, antibiotics, oxygenation etc.
- The assessment of *dosha*, *dushya*, *srothas*, *rogamarga*, *ojas*, *jnanendriya*, *karmendriya* and *arishta lakshana* in critically ill patients holds good even in present scenario.
- The contemporary trend in assessment of critical illness is mainly inclined towards physical examinations, biochemical parameters, invasive and non invasive techniques, which help for better prediction of prognosis and for prompt interventions

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