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## “Critical Study of Concept of Utpata (Natural Calamities) in Ayurved and Jyotish Science and Its Influence on Epidemic Diseases with special reference to COVID-19.”

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### Abstract:

The Jyotish science is complimentary and contemporary to the Ayurvedic medical science. The principles of Jyotish science have been applied in Ayurvedic science at various places. Utpata (natural calamity) is one such concept which not only indicate about likely development of epidemic diseases but also about the overall fortune of the affected region where these utapatas occur. As per jyotishacharya Varahamihir, the abnormal state of environment is ‘Utpata’. Ayurveda, had referred it as abnormal state of 4 environmental factors like Vata (wind), Jala (water), Desha (Area) and Kala (Season) and referred their abnormality as Vikrut Vata, Vikrut Jala, Vikrut Desha and Vikrut Kala while enumerating the causes of epidemic diseases (Janapada Udhwansa Vyadhis). From both science point of view Utpatas are created by supernatural power like God in reaction to sinful acts of the society to show their displeasure and wrath. As per acharya Punarvasu, the Adharma (sins), Shastra prabhav (wars), Abhishapa (curse), and Rakshas (microbes) are the 4 major causes of Utpatas. Along with this acharya Sushruta had also added the causes like malefic grahas and Nakshatras as the causes for Utpatas. Ayurvedic and Jyotish science have given the characteristic features of the various Utpatas. The concept of Utpata could be helpful in predicting the likely diseases in the affected geographical population. Hence there is need to study this concept critically. It is concluded that the concept of Utpata is helpful in predicting the likelihood of epidemic diseases and overall wellbeing of the affected geographical area. Both the sciences had prescribed the pacifying measures to contain the Utpatixanas and related epidemic diseases.

**Keywords:** Utpata, Adharmacharan, Janapada Dhwansa

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**INTRODUCTION:**

The Jyotish science is complimentary and contemporary to the Ayurvedic medical science. The principles of Jyotish science have been applied in Ayurvedic science at various places. Utpata (natural calamity) is one such concept which not only indicate about likely development of epidemic diseases but also about the overall fortune of the affected region where these utapatas occur. As per Jyotishacharya Varahamihir, the abnormal state of environment is 'Utpata'. Ayurveda, had referred it as abnormal state of 4 environmental factors like *Vata* (wind), *Jala* (water), *Desha* (Area) and *Kala* (Season) and referred their abnormality as *Vikrut Vata*, *Vikrut Jala*, *Vikrut Desha* and *Vikrut Kala* while enumerating the causes of epidemic diseases (*Janapada Udhwansa Vyadhis*). From both science point of view Utpatas are created by supernatural power like God in reaction to sinful acts of the society to show their displeasure and wrath. As per Acharya Punarvasu, the *Adharma* (sins), *Shastra prabhav* (wars), *Abhishapa* (curse), and *Rakshas* (microbes) are the 4 major causes of Utpatas. Along with this Acharya Sushruta had also added the causes like malefic *grahas* and *Nakshatras* as the causes for Utpatas. Ayurvedic and Jyotish science have given the characteristic features of the various Utpatas. The concept of Utpata could be helpful in predicting the likely diseases in the affected geographical population. Hence there is need to study this concept critically. Both the sciences had advocated the '*Shanti Vidhana*' (pacifying measures) for minimizing the effects of calamities, Ayurveda had also suggested to break the chain of *Adharmacharan* (sinful acts), *Abhishapa* (curse), *Shastra* (wars) and *Rakshas* (microbes) by maintaining the noble conduct and hygienic behavior.

**MATERIAL & METHOD**

Literary method of research was adopted in the present study. Critical and comparative study of Ayurvedic literature and Jyotish science literature was done to come to logical conclusion

**REVIEW OF LITERATURE****Definition of Utpata (Natural Calamities)**

As per Acharya Varahamihir, the abnormal state of environment is 'Utpata'<sup>[1]</sup>

Ayurveda, had also referred it as abnormal state of 4 environmental factors like *Vata* (wind), *Jala* (water), *Desha* (Area) and *Kala* (Season) and referred them as *Vikrut Vata*, *Vikrut Jala*, *Vikrut Desha* and *Vikrut Kala* while enumerating the causes of epidemic diseases (*Janapada Udhwansa Vyadhis*).<sup>[2]</sup> In today's modern terminology, *Utpata* can be called as natural calamity.

**Causes of Utpata (Natural Calamities) As Per Jyotish**

As per Jyotish science the cause of natural calamity is the sinful inhuman and unhygienic behavior (*apchara*) as a result of which the, God gets annoyed and shows his wrath in the form of natural calamities. The calamities (*Utpata*) may occur on land or space.<sup>[3]</sup>

**Causes of Utpata (Natural Calamities) As Per Ayurveda**

Acharya Vagbhata and Indukara are of the opinion that the reason for natural calamities due to wind, water, tropics and seasons is because of malefic planetary transition as well as the sinful acts. The calamities (*Utpata*) may occur on land or space.<sup>[4]</sup>

As per Acharya Punarvasu, there are four major causes of natural calamities as under<sup>[5]</sup>:

1. **Adharma** (Iniquity/Sin) - Acharya Punarvasu is of the opinion that the sinful deeds done purposely to get undue advantage leads to moral downfall of the society initiating the vicious chain of sinful acts as a result of which, Gods also leaves that place and

show his wrath in the form of alteration of environment.

2. **Shastra Prabhava**(Wars) - Acharya Punarvasu says that when anger, greed and ego supersedes over the general common sense, the rulers engage themselves in unnecessary battles. The use of weapons of mass destruction in battles, leads to huge casualties, diseases and alteration of environment.

3. **Rakshogana** (microbes) – Acharya Punarvasu is of the opinion that the sins (*adharmā*) and unhygienic behavior (*apachara*) leads to the growth of microbes (*Rakshogana and Bhuta sangha*) causing microbial pollution of the environment.

4. **Abhishapa** (Curse) – As per acharya Punarvasu, due to rising sinful acts in society, peoples show disrespect towards elders, teachers, learneds, rishis and other noble persons. The constant insult and humiliation of noble persons force them to show their wrath in the form of curse towards the ungrateful society resulting in natural calamities and epidemic diseases.<sup>1</sup>

As per acharya Sushruta, following are the causes of Utpata and epidemics<sup>[6]</sup>

1. *Ritu Vyapat* (Seasonal abnormality)
2. *Viparit Anna Aushadhi* (Intake of contaminated food and drugs)
3. *Abhicharaj Krutya* (Evil hymen induced demons)
4. *Abhishapa of Guru/Siddhas* (Curse by teacher or learneds)
5. *Raksha Krodha* (Microbial invasion)
6. *KayikVachik Manas Adharma* (Psychosomatic Sinful acts)
7. *Visha* (Toxins)
8. *GarhitGraha Nakshatra Char* (Malefic Planetary & Constellation movement)

#### **Characteristics of Utpata causing Factors**

##### **Vayu Utpata (Wind Calamity)**

###### **As Per Ayurvedic Science**

**The characteristics of unnatural wind are** – The wind flowing against the seasonal rule i.e. very

stable, very unstable, very heavy, very cold, very hot, very humid, noisy with tornado and unpleasant smell, sand, dust and smoke is an abnormal wind giving rise to the disease.<sup>[7]</sup>

###### **As Per Jyotish Science**

If the wind flows with high speed continuously till seven days, it indicates the Vayu Utpata and leads to fear and heavy rain.<sup>[8]</sup> The wind flowing along with the sand, dryness in opposite direction with all the features of nuisance is horrible and indicates Vayu Utpata.<sup>[8]</sup>

###### **As Per Ayurvedic Science**

##### **Jala Utpata (Water Calamity)**

**The characteristics of unnatural water are** – The water which is having abnormal smell, colour, taste, touch, moisture, without the aquatic creatures and birds, which had reduced to mud in lake and which is unpleasant and had lost the qualities, gives rise to the diseases.<sup>[9]</sup>

###### **As Per Jyotish Science**

As per Jyotish science, the change in smell and taste of the water, sudden drying of the water source and sudden flow of water from the land without digging it, indicates the *JalaUtpat* (water calamity features).<sup>[10]</sup>

##### **DeshaUtpata (Demic Calamity)**

###### **As Per Ayurvedic Science**

**The characteristics of endemic zone are** – The country in which the colour, smell, taste and touch of the land had gone abnormal, the land which had acquired lot of moisture and there is growth of branches of herbs and shrubs, tendrils and grass, the land which harbor harmful snakes, insects, mosquitoes, sand flies, rats, owls, vultures, the land which had declined in qualities and crops, the land where birds make terrible sounds, where dogs barks and cries terribly, land where there is a frequent fall of meteorite (*ulka*), lightning (*vidyut*), earthquakes (*Bhukampa*), where there is abnormal sound comes out of earth, where the sun, moon and other stars are covered under the dry, whitish reddish clouds, where the morals and ethics of the

society had gone down and where there is rise in theft and robbery, a country where there is shouting and compassionate call, chaos and anxiety everywhere is a abnormal country which eventually by altering the environmental harmony leads to the epidemic diseases and loss of the human lives.<sup>[11]</sup>

#### **As Per Jyotish Science**

If the shivalinga or idol of God or temple gets cracked or makes sound or shivers or sweats without any reason are utpat laxanas in the country and indicates the losses to king and the country.<sup>[12]</sup>

The country in which the flames are seen without the fire and even the fuel does not get ignited indicates the country related Utpat laxanas which are going to cause pain to the countrymen.<sup>[13]</sup>

Similarly, the country in which there is smoke without the fire, shower of dust, darkness in day, disappearance of constellations (*nakshatras*) in cloudless sky during night or appearance of constellations (*nakshatras*) in cloudless sky during the day indicate, Utpat laxanas and are horrible.<sup>[14]</sup>

Similarly, the burning in cities, domestic animal and humans without the fire is horrible and indicate Utpat laxana.<sup>[15]</sup> If the rainbow is seen during day or night in either east or west direction in cloudless sky, it indicates the impending food crisis that is going to take place.<sup>[16]</sup>

#### **KalaUtpata (Seasonal Calamity)**

##### **As Per Ayurvedic Science**

**The characteristics of abnormal season are** – The season which shows the abnormal features is disease genic. Examples are – summer showing features of rainy season and rainy season having either drought or flood like situation due to heavy rain. The winter season, showing warmness and summer season, showing features of coolness are some of the abnormalities of seasons which by altering the environmental ecosystem leads to the diseases.<sup>[17] [18]</sup>

##### **As Per Jyotish Science**

As per Jyotish science, the food crisis (*durbhikshya*) due to draught or flood, diseases due to untimely raining and raining without the clouds in the sky indicates the water related seasonal calamities. It also indicates the attack from the enemy state or death of the ruling king. The coolness in summer and warmness in winter, the opposite changes of weather in all seasons indicate the season related calamities which leads to diseases (*rogabhaya*) or misfortune (*daivabhaya*) or fear from king (*raj bhaya*) within six months.<sup>[19]</sup>

#### **Additional Factors In Which Utpat Features Can Be Seen**

As per acharya Sushruta, beside above factors the Utpat features can be noticed in <sup>[20]</sup>

1. *Gruha* – Home
2. *Dara/Bharya* – Wife
3. *Shayan* – Cot
4. *Aasan* – Chair
5. *Yana* – Chariot, cart etc
6. *Wahan* – Bullocks, Elephants, Horses etc
7. *Mani* – Rock crystal etc
8. *Ratna* – Ruby etc.

#### **Epidemic Diseases Due To Utpata As Per Ayurveda**

The contaminated air due to Utpata enters the nose and affects the respiratory system, giving rise to various flu like symptoms such as rhinorrhea, cough, dyspnea, anosmia, headache and fever and rash like pox.<sup>[20]</sup>

#### **Contaminated Food & Drugs Cause for Epidemics**

The intake of contaminated food and drugs during the abnormal seasons leads to epidemics.<sup>[21]</sup>

#### **The Shantividhana (Pacifying Measures) For Utpatas As Per Ayurveda**

As per acharya Sushruta, following measures should be adopted for pacifying the Utpat laxanas.<sup>[22]</sup>

1. *SthanParityaga* – Deserting the affected zone
2. *Shanti Karma* – Pacifying rituals
3. *Prayaschitta* – Penance/apology

4. *Mangal* – Wearing auspicious gemstones, drug roots etc
5. *Japa*– Chanting of ‘Omkar’ Mantra or mantras of vedas
6. *Homa*– Votive oblation ritual
7. *Upahara*– Gifts to the gods
8. *Ejya* – Yagya / Sacred fire
9. *Anjali Namaskara* – Bowing with folded hands to Gods and teachers
10. *Tapa* – Self pain by observing fast etc
11. *Niyam*– Following the ethics and codes mentioned in religious texts
12. *Daya*– Being merciful towards mankind and animals
13. *Dana* – Offering donations of wealth to needy
14. *Diksha* – Accepting mantras from teachers
15. *Abhyapagama* – Forfeiting to teachers, Gods and Bramhins

#### **The Shantividhana (Pacifying Measures) For Utpatas As Per Jyotish**

The appearance of microbes, indicate the impending epidemic diseases. Hence, acharya

Garga had suggested the following pacifying measures (*Shanti Vidhan*) in the form of worship of lord Endra and Endrani, donating food to the bramhanas, and giving *Bali* to the Gods etc.<sup>[23]</sup>

If there is Utpata due to fire, then votive oblations (*homa*) with woods of milky trees, flax seeds and ghee should be done. Also the gold should be donated to the bramhins.<sup>[24]</sup>

If there is Utpata due to water, then Yagya for Sun, moon and wind should be performed. Also donate the food, cow, gold to the bramhins.<sup>[25]</sup>

#### **Modern Calamity Terms**

A tornado is a violent storm comprised of extremely strong winds spiraling around a central point in a funnel shaped cloud. A cyclone is large destructive storm that is comprised of strong winds rotating around a center of low pressure. Tornadic events are often accompanied by other forms of severe weather including strong thunderstorm, strong winds, lightening and hail.

### **OBSERVATIONS & RESULTS**

**Table No. 1- Causes of Utpata**

| <b>Root causes of Utpata</b> | <b>Adharmacharan (sinful acts)</b>   | <b>ShastraPrabhava (wars)</b>   | <b>Rakshas(microbes)</b>  | <b>Abhishapa(curse)</b>  |
|------------------------------|--|---|---|--|
| <b>Action</b>                | sinful deeds done purposely to get undue advantage leads to moral downfall of the society initiating the vicious chain of sinful acts resulting in of alteration of environment. | Anger, greed and ego supersedes over the general common sense, the rulers engage themselves in unnecessary battles. The use of weapons of mass destruction in battles, leads to huge casualties, diseases | Sins ( <i>adharm</i> ) and unhygienic behavior ( <i>apachara</i> ) leads to the growth of microbes ( <i>Rakshogana and Bhuta sangha</i> ) causing microbial pollution of the environment. | The constant insult and humiliation of noble persons force them to show their wrath in the form of curse towards the ungrateful society resulting in natural calamities and epidemic diseases. |
| <b>Net Effect</b>            | <b>Wrath of God and Nature</b>   |   |   |  |

**Table No. 2- Characteristics of Utpata**

| Characteristics | VikrutVata   | VikrutJala   | Vikrut Desha   | Vikrut Kala   |
|-----------------|--|--|--|---|
| <b>Ayurveda</b> | wind flowing against the seasonal rule i.e. very stable, very unstable, very heavy, very cold, very hot, very humid, noisy with tornado and unpleasant smell, sand, dust and smoke | water with abnormal smell, colour, taste, touch, moisture, without the aquatic creatures and birds               | The country in which the colour, smell, taste and touch of the land gets abnormal, the land which harbor harmful snakes, insects, mosquitoes, sand flies, rats, owls, vultures, the land where birds make terrible sounds, where dogs barks and cries terribly, land where there is a frequent fall of meteorite ( <i>ulka</i> ), lightning ( <i>vidyut</i> ), earthquakes ( <i>Bhukampa</i> ) | The winter season, showing warmness and summer season, showing features of coolness           |
| <b>Jyotisha</b> | The wind flowing along with the sand, dryness in opposite direction with all the features of nuisance and wind flows with high speed continuously till seven days                  | change in smell and taste of the water, sudden drying of the water source and sudden flow of water from the land | If the shivalinga or idol of God or temple gets cracked or makes sound or shivers or sweats without any reason. The country in which there is smoke without the fire, shower of dust, darkness in day. Appearance of constellations ( <i>nakshatras</i> ) in cloudless sky during the day.   | The coolness in summer and warmness in winter, the opposite changes of weather in all seasons |

**Table No. 3- Predictions of Utpata**

| Environmental Factors | VikrutVata                   | VikrutJala                  | Vikrut Desha   | Vikrut Kala  |
|-----------------------|------------------------------|-----------------------------|--|--|
| <b>Ayurved</b>        | Giving rise to the diseases. | Gives rise to the diseases. | by altering the environmental harmony leads to the epidemic diseases and loss of the human lives | By altering the environmental ecosystem leads to the diseases. |

|                |                              |                                       |  |   |
|----------------|------------------------------|---------------------------------------|--|---|
| <b>Jyotish</b> | Fear, horror and heavy rain. | gives rise to great fear among masses | Losses to king and the country. food crisis and Pain to the countrymen | Development of diseases ( <i>rogabhaya</i> ) or misfortune ( <i>daivabhaya</i> ) or fear from king ( <i>Rajbhaya</i> ) within six months. |
|----------------|------------------------------|---------------------------------------|--|---|

**Table No. 4 -Number of Earthquakes worldwide Between 2018 To 2020**

| Magnitude | 2018   | 2019   | 2020 (Till June) |
|-----------|--------|--------|------------------|
| 8.0 – 9.9 | 1      | 1      | 0                |
| 7.0 – 7.9 | 16     | 9      | 6                |
| 6.0 – 6.9 | 117    | 133    | 54               |
| 5.0 – 5.9 | 1675   | 1489   | 720              |
| 4.0 – 4.9 | 12,777 | 11,337 | 6,417            |
| Total     | 14,586 | 12,973 | 7,239            |

**Table No. 5 -Worldwide Eclipses in 2019 & 2020**

| 2019       | Eclipse                        | Region  | 2020      | Eclipse                        | Region   |
|------------|--------------------------------|---|-----------|--------------------------------|--|
| Jan 5-6    | Solar Eclipse (Partial)        | East Asia, Pacific  | Jan 10-11 | Lunar Eclipse (Penumbral)      | Europe, Asia, Australia. Africa, South America           |
| Jan 20-21  | Lunar Eclipse (Total)          | Asia, Europe, Africa, North & South America                     | Jun 5-6   | Lunar Eclipse (Penumbral)      | Europe, Asia, Australia. Africa, South America           |
| July 2     | Solar Eclipse (Total)          | North & South America, Pacific,                                 | Jun 21    | <b>Solar Eclipse</b> (Annular) | South East Europe, Much of Asia, North Australia.        |
| July 16-17 | Lunar Eclipse (Partial)        | Asia, Europe, Africa, North & South America, Pacific, Antarctic | July 4-5  | Lunar Eclipse (Penumbral)      | South west Europe, Africa, North & South America         |
| Nov 11     | Transit Mercury                | South west Asia, Europe, Africa, North & South America          | Nov 29-30 | Lunar Eclipse (Penumbral)      | Europe, Asia, Australia, North & South America           |
| Dec 26     | <b>Solar Eclipse</b> (Annular) | East Europe East Africa Asia, North west Australia              | Dec 14    | Solar Eclipse (Complete)       | South of Africa, South America, Indian Ocean, Antarctica |



**Table No. 6 - Number of Notable Tornadoes worldwide Between 2019 To 2020**

| Months    | 2019<br>(US + Rest world) | 2020 (Till July)<br>(US + Rest world) |
|-----------|---------------------------|---------------------------------------|
| January   | 22 + 3                    | 88 + 1                                |
| February  | 27 + 0                    | 42 + 1                                |
| March     | 145 + 2                   | 79 + 1                                |
| April     | 276 + 1                   | 251 + 0                               |
| May       | 509 + 0                   | 69 + 3                                |
| June      | 179 + 0                   | 54 + 4                                |
| July      | 100 + 2                   | 22 + 1                                |
| August    | 78 + 3                    |                                       |
| September | 83 + 0                    |                                       |
| October   | 62 + 2                    |                                       |
| November  | 19 + 3                    |                                       |
| December  | 56 + 2                    |                                       |

**Table No. 7 - Number of Notable Cyclones worldwide Between 2019 To 2020**

| Cyclone Names | Speed       | 2019         | Areas                                      | Cyclone Names | Speed        | Areas                                 | 2020 (Till July) |
|---------------|-------------|--------------|--|---------------|--------------|---------------------------------------|------------------|
| Pabuk         | 95 Km/h     | Jan 9        | Malaysia<br>Vietnam<br>Thailand<br>Myanmar | Blake         | 75Km/h       | Australia                             | Jan<br>4 -11     |
| Amang         | 55 Km/h     | Jan<br>4-22  | Philipines                                 | Claudia       | 150 Km/h     | Indonesia                             | Jan<br>4 -17     |
| Galena        | 205<br>Km/h | Feb<br>4-14  | Madagascar<br>Mauritius                    | Diane         | 95 Km/h      | Madagascar<br>Mauritius               | Jan<br>22-26     |
| Oma           | 130<br>Km/h | Feb<br>7-22  | Australia                                  | Uesi          | 120 Km<br>/h | Australia<br>New zeland               | Feb<br>3 -15     |
| Idai          | 190<br>Km/h | Mar<br>4-16  | Madagascar<br>Zimbabwe<br>Mozambiq         | Herald        | 175<br>Km/h  | Australia<br>New zeland<br>New Guinea | Mar<br>10-17     |
| Savannah      | 170<br>Km/h | Mar<br>7-20  | Bali<br>Java<br>Coco Island                | Harold        | 230 Km/h     | Papua New<br>Guinea<br>Fiji           | Apr 1 -11        |
| Trevor        | 175<br>Km/h | Mar<br>15-26 | Papua New<br>Guinea<br>Australia           | Vongfong      |              | Phillipines<br>Taiwan                 | May 10-18        |
| Veronica      | 215<br>Km/h | Mar<br>18-31 | Timor<br>West<br>Australia                 | Amphan        | 240 Km/h     | India<br>Shrilanka<br>Bangladesh      | May 16-21        |
| Kenneth       | 215<br>Km/h | Apr<br>21-29 | Madagascar<br>Tanzania<br>Mozambiq         | Bertha        | 85 Km/h      | America<br>Bahama                     | May 27-28        |

|          |          |            |  |           |          |   |           |
|----------|----------|------------|--|-----------|----------|---|-----------|
| Fani     | 215 Km/h | Apr 26-30  | India<br>Shrilanka<br>Bangladesh           | Amanda    | 65 Km/h  | Gautemala<br>Hondarus<br>Costa Rica<br>El Salvador      | May 30-31 |
| Lili     | 75 Km/h  | May 4-11   | Timor<br>Indonesia                         | Nisarga   | 110 Km/h | India   | June 1-4  |
| Vayu     | 150 Km/h | Jun 10-19  | Maldives<br>India<br>Pakistan<br>Lakshdwip | Cristobal | 95 Km/h  | Gautemala<br>El Salvador<br>Mexico<br>America<br>Canada | June 1-10 |
| Mun      | 65 Km/h  | July 1-4   | Vietnam<br>Laos<br>China                   |           |          |   |           |
| Barry    | 120 Km/h | July 11-15 | America                                    |           |          |   |           |
| Falcon   | 85 Km/h  | July 12-21 | China<br>Taiwan<br>Japan<br>Korea          |           |          |   |           |
| Wipha    | 85 Km/h  | July 30    | Vietnam<br>Laos<br>China                   |           |          |   |           |
| Lekima   | 195 Km/h | Aug 2-14   | China<br>Taiwan<br>Korea                   |           |          |   |           |
| Krosa    | 155 Km/h | Aug 5-16   | Taiwan<br>Korea<br>Japan                   |           |          |   |           |
| Lingling | 165 Km/h | Sept 1-7   | Philipines                                 |           |          |   |           |
| Fernand  | 85 Km/h  | Sept 3-5   | Mexico<br>America                          |           |          |   |           |
| Humberto | 205 Km/h | Sept 13-20 | America<br>Cuba<br>Bahama                  |           |          |   |           |
| Lorenzo  | 260 Km/h | Sept 23-30 | America<br>France<br>West Africa           |           |          |   |           |
| Nestor   | 185 Km/h | Oct 18-19  | America<br>Mexico                          |           |          |   |           |
| Olga     | 65 Km/h  | Oct 25-26  | America                                    |           |          |   |           |
| Nakri    | 120 Km/h | Nov 4-11   | Philipines                                 |           |          |   |           |
| Bulbul   | 155 Km/h | Nov 5-11   | India<br>Bangladesh                        |           |          |   |           |

|         |             |              |                          |  |  |  |  |
|---------|-------------|--------------|--------------------------|--|--|--|--|
| Kammuri | 165<br>Km/h | Nov<br>24    | Philipines<br>Caroline   |  |  |  |  |
| Belna   | 165<br>Km/h | Dec<br>2-11  | Madagascar<br>Seychelles |  |  |  |  |
| Ursula  | 165<br>Km/h | Dec<br>19-23 | Philipines<br>Caroline   |  |  |  |  |
| Sarai   | 165<br>Km/h | Dec<br>23-31 | Fiji                     |  |  |  |  |

## DISCUSSION:

In 'UtpatLaxanadhyaya' of his treatise 'Brihat Samhita' jyotishacharyaVarahamihir had mentioned that whatever is telling about Utpatas is taken from the earlier work of acharya 'Garaga' who in turn have learned it from *Muni 'Atri'*. As perjyotishacharyaVarahamihir, the abnormal state of environment is 'Utpata'. AyurvedacharyaAtreyaPunarvasu, had referred it as abnormal state of 4 environmental factors like *Vata*(wind), *Jala*(water), *Desha* (Area) and *Kala* (Season) and referred their abnormality as *VikrutVata*, *VikrutJala*, *Vikrut Desha* and *Vikrut Kala* while enumerating the causes of epidemic diseases (*JanapadaUdhwansaVyadhis*). From both science point of view Utpatas are created by supernatural power like God in reaction to sinful acts of the society to show their displeasure and wrath. As per acharya Punarvasu, the *Adharma* (sins), *Shashtra prabhav* (wars), *Abhishapa*(curse), and *Rakshas*(microbes) are the 4 major causes of Utpatas. Ayurvedic and Jyotish science have given the characteristic features of the various Utpatas. Whereas the Ayurvedic description of Utpatas mainly indicates the impending diseases, the Jyotishiya description focus on development of diseases as well as about impending doom on population and ruler of that area and effect on crops, trees, domestic animals. The season related Utpat features are also found in Ayurvedic concept of '*TrividhRoga Karanam*' (three major causes of the diseases) wherein the *heena*(negligible), *mithya* (perverted) and *atiyoga* (excessive) of ritus (seasons), produce same

features. While telling sinful act as the basic reason behind natural calamities, ancient acharyas are emphasizing the need to observe noble conduct, ethics, morality and hygienic behavior in the society to create the healthy society. The society which is engaged in sinful acts, lies and deception of each other, showing disregard for elders and noble persons and lost all morality, is also prone to break the rules of hygienic behavior and likely to face the diseases. Similarly, the excessive killing of humans in war, and killing of animals and birds for eating misbalance the environmental ecosystem. It also favours the growth microorganism on blood media due to excessive bloodshed giving rise to various infectious epidemic diseases. Though at present there is no mechanism to understand the wrath of noble persons and Gods giving rise to natural calamities but theory of curse given in Ayurveda and Jyotish science, holds truth somewhere as both science believes in God and *KarmajVyadhis* (diseases due to bad deeds). The God and nature may be considered synonymous while thinking of Utpatas. In nutshell, the social, moral, microbial pollution of environment brings out the Utpatas. As per acharya Dalhana, the contaminated infectious airdroplets due to Utpata enters the nose and affects the respiratory system to give rise to various flu like symptoms such as rhinorrhea, cough, dyspnea, anosmia, headache and fever. There is need to study the causes of natural calamities and epidemic diseases mentioned in ancient science in view of

rising global pandemics like COVID-19, Influenza, Bird flu etc.

Attempt was made to study the effect of Earthquakes, eclipses, cyclones and tornados in view of present global pandemic of COVID-19. Rarely solar eclipse can occur one fortnight before and after lunar eclipse. This happened in 2018 and in 2020. Acharya Varamihir, had mentioned that any eclipse occurring before its schedule time is an *Utpat* indicating feature [B.S.5/16]. It was observed that **Solar eclipse** took place on December 26, 2019 when this global pandemic of COVID-19 set in. Again solar eclipse took place on June 21, 2020 when there was surge in cases of COVID 19 across the globe. This was the eclipse before the schedule time. Hence, it proves the *Utpat* indicating nature of the eclipses (*grahanas*).

Total 20,212 **Earthquakes** occurred between January 2019 to June 2020 which is significantly high proving the *Utpatlaxanas*.

Total 9 **cyclones** occurred from November 2019 to January 2020 with each month counting for 3 cyclones when Global pandemic of COVID 19 started spreading. These are the highest number of

cyclones counting for any other months of the year thus proving it as the *Utpatlaxana*.

America topped the list of the nation in number of notable **tornadoes** per year. Highest number of tornados 251 occurred in the month of April 2020 in US when surge of Corona virus took place suggesting it as a natural calamity to indicate about the future problems which occurred in the form of COVID pandemic in US.

#### CONCLUSIONS:

1. *Utpatas* are the natural calamities and can be used to predict future epidemic diseases.
2. *Utpatas* may be considered as the wrath of the nature in response to environmental pollution and misbalance of natural ecosystem.
3. Microbial proliferation due to battles and bloodshed may give rise to natural calamities and epidemic diseases.
4. There is need to study the causes of natural calamities and epidemic diseases mentioned in ancient science in view of rising global pandemics.

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