Comprehend of Patho-physiological Changes & Consequential Prognosis in Marmabhigahata (Injury to Marma)

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Abstract- ‘Marma’ literary communicates the sense of vital parts of the body. The science of Marma is an unique approach of Ayurveda and established to help the practice of surgery. There are total 107 Marma’s in the human body. These are classified into five types according to location, structures involved, effect and consequences or prognosis of the trauma over there. Any type of Marmabhigahata (injury to Marma) is likely to produce subjective manifestations governed by the extent and the nature of injuries to the Marmas. Tridosha in the body have their Panchabhautik origin. The Pancha mahabhautas are the main constituting component of Tridosha such that, the consequence of traumatised Marma has got direct bearing on the predominance of Tridoshas over there. Any trauma to these Marmas is likely to provoke both the Shareerik and Manasik dosha which thereby affects the body (Sharira) and Mind (Mana). So, as the base (body and Mind) gets affected, the Jeevatma or Bhootatma itself ceases to exit. This changes in Marma after injury such as deformities and delayed healing mainly depends upon the consequences that occur due to patho-physiological changes over Marma.

Keyword: Marma, Marmabhigahata, injury to Marma, Tridosha, Panchabhuta, Consequences

I. INTRODUCTION

‘Marma Sharira’ a science of vital anatomical sites with higher life value, has been established to help the practice of surgery in Ayurveda. Sushruta ‘the father of surgery’ has signified this science by equating it, as ‘half of the knowledge of surgery[1]. He has elaborated that there are 107 such anatomical sites/points (vulnerable) lies in the body[2,3] which need special attention of the clinicians during practice. This vital point of the body is having very technical and practical utilization from traumatic attack and diagnosis of various diseases.

The term ‘Marma’ literary communicates the sense of vital parts of the body. Any injuries or mechanical involvement directly affecting the sites of Mamsa are likely to take away the life. Knowledge pertaining the structure and location of Marma in the body finds better scope in the battle field, when enemies counteract each other. The biggest war recorded in the history of India with the highest causality was the battle of Mahabharata[4].

In comparison to an elaborate and tedious description of all the structures of the body, the knowledge of regional Anatomy finds its better scope in the management of the injuries involving the Marma or the vital parts of the body. Besides the perfect knowledge of Anatomy the surgeons have to rely upon their own experiences and take care of the vital structures like nerves, arteries, joints and tendons, etc. Knowledge of Marma popularised the excellence of Indian surgeons in the field of the surgery even though the details of anatomical approaches in the field concerned was not performed.

Marma’s are the specific locations on the human body, which when traumatized, will either surely cause death or permanent deformity with extreme pain[5,6]. Marmas are the juncture of Mamsa (muscular tissue), Sira (blood vessels), Snayu (nerve or tendons or ligament), Asthi (bone tissue) and Sandhi (joints). The Pranas are specifically situated in Marmas by the virtue of
their nature, hence a trauma to any one of these Marmas will invariably causes physical disturbances in accordance with their particular types[7,8].

Marmabhighbata (trauma or injury to Marma) is likely to produce subjective manifestations governed by the extent and the nature of injuries to the Marmas. The behaviour of Marma after injury or consequences are the end results in relation to existence of life process. Such consequences are the deformities precipitating over the body, time factor etc are mainly depends upon the prognosis and its patho-physiological changes. This consequential prognosis of Marmabhighbata has been the unique approach of Ayurveda.

III. CLASSIFICATION

107 numbers of Marmas has been structurally classified into five types depending on the structures involved like Mamsa (muscles), Sira (blood vessels), Snayu (nerve or tendons or ligament), Asthi (bones) and Sandhi (joints). These Marmas are named as Mamsa Marma, Sira Marma, Snayu Marma, Asthi Marma and Sandhi Marma. In general, depending on the predominance of anyone of these above said structures, the body Marmas have been designated accordingly[9].

Table 1: Name & Number of Marmas according to Structural (Rachananusar) Classification

| Sl.No | Name of the Marma      | Number of Marma | Sl.No | Name of the Marma      | Number of Marma |
|-------|------------------------|-----------------|-------|------------------------|-----------------|
| 1     | Tala Hridaya           | 4               | 3     | Guda                   | 1               |
| 2     | Indravasti             | 4               | 4     | Stanarohita            | 2               |
|       | **Sira Marma**         | **Total 41**    |       |                        |                 |
| 1     | Nila Manya             | 4               | 9     | Apasthamha             | 2               |
| 2     | Matrika                | 8               | 10    | Hridaya                | 1               |
| 3     | Sringataka             | 4               | 11    | Nabhi                  | 1               |
| 4     | Apanga                 | 2               | 12    | Parswa Sandhi          | 2               |
| 5     | Sihapani               | 1               | 13    | Brihati                | 2               |
| 6     | Phana                  | 2               | 14    | Lohitaksha             | 4               |
| 7     | Stanamula              | 2               | 15    | Urvi                   | 4               |
| 8     | Apalapa                | 2               |       |                        |                 |
|       | **Snayu Marma**        | **Total 27**    |       |                        |                 |
| 1     | Ani                    | 4               | 6     | Vasti                  | 1               |
| 2     | Vitapa                 | 2               | 7     | Kshipra                | 4               |
| 3     | Kashadhura             | 2               | 8     | Amsa                   | 2               |
| 4     | Kurcha                 | 4               | 9     | Vidhura                | 2               |
| 5     | Kurcha Sira            | 4               | 10    | Utkshapa               | 2               |
|       | **Asthi Marma**        | **Total 8**     |       |                        |                 |
| 1     | Katika Taruna          | 2               | 3     | Amsa Phalaka           | 2               |
| 2     | Nitamba                | 2               | 4     | Sankha                 | 2               |
|       | **Sandhi Marma**       | **Total 20**    |       |                        |                 |
| 1     | Janu                   | 2               | 6     | Manibandha             | 2               |
| 2     | Kurpuha                | 2               | 7     | Kukundara              | 2               |
| 3     | Simanta                | 5               | 8     | Avara                  | 2               |
| 4     | Adhipati               | 1               | 9     | Krikatika              | 2               |
| 5     | Gulpha                 | 2               |       |                        |                 |

The next most important classification of Marmas is based on the consequences or prognosis produced as a result of trauma over Marmas. Under this approach, all the 107 Marmas of the body have been again classified into five groups. They are Sadya Pranahara (death immediately after injury), Kalantara Pranahara (death after laps of sometime), Vishalyaghna,(death soon after removing the Shalya), Vaikalyakara (injury causing disability) and Rujakara (injury causing severe pain). Pointing out the
number of these five types of Marma, Sadyah Pranahara Marma are 19, Kalantara Pranahara are 33, Vishalyaghna are 3, Vaikalyakara are 44 and Rujakara Marmas are 8 in number[10].

Table 2: Name & Number of Marmas according to classification based on consequences of trauma over the Marma area

| Sl.No | Name of the Marma | Number of Marma | Sl.No | Name of the Marma | Number of Marma |
|-------|-------------------|-----------------|-------|-------------------|-----------------|
| 1     | Srungataka        | 04              | 5     | Guda              | 01              |
| 2     | Adhipati          | 01              | 6     | Hridaya           | 01              |
| 3     | Shankha           | 02              | 7     | Vasti             | 01              |
| 4     | Matrika           | 08              | 8     | Nabhi             | 01              |

| Sl.No | Name of the Marma | Number of Marma | Sl.No | Name of the Marma | Number of Marma |
|-------|-------------------|-----------------|-------|-------------------|-----------------|
| 1     | Simanta           | 05              | 7     | Parswa Sandhi     | 02              |
| 2     | Tala Hridaya      | 04              | 8     | Brihati           | 02              |
| 3     | Khipra            | 04              | 9     | Nitamba           | 02              |
| 4     | Indra Vasti       | 04              | 10    | Stanamula         | 02              |
| 5     | Katik- Taruna     | 02              | 11    | Stanarohita       | 02              |
| 6     | Aparastambha      | 02              | 12    | Apalapa           | 02              |

| Sl.No | Name of the Marma | Number of Marma | Sl.No | Name of the Marma | Number of Marma |
|-------|-------------------|-----------------|-------|-------------------|-----------------|
| 1     | Sthapani          | 01              |       |                   |                 |
| 2     | Utksepa           | 02              |       |                   |                 |

| Sl.No | Name of the Marma | Number of Marma | Sl.No | Name of the Marma | Number of Marma |
|-------|-------------------|-----------------|-------|-------------------|-----------------|
| 1     | Lohitaksa         | 04              | 10    | Vidhura           | 02              |
| 2     | Ani               | 04              | 11    | Krikatika         | 04              |
| 3     | Janu              | 02              | 12    | Ansa              | 02              |
| 4     | Urvi              | 02              | 13    | Amsaphalaka       | 02              |
| 5     | Kurcha            | 04              | 14    | Apanga            | 02              |
| 6     | Vitapa            | 02              | 15    | Nila              | 02              |
| 7     | Kurpara           | 02              | 16    | Manya             | 02              |
| 8     | Kukandara         | 02              | 17    | Phana             | 02              |
| 9     | Kaksadhara        | 02              | 18    | Avarta            | 02              |

107 Marmas present all over the body are preciously situated over the trunk and the extremities. In view of significance, the Marmas situated over the trunk carry more importance in comparison to those situated over the extremities. Ayurveda emphasizes upon the Shiras (Head), Hridaya (Heart) and Vasti (Bladder) of the body, designated as Trimarma (Three vital parts)[11] and specifically indicated that these are the special seat of Pranas or life out of 107 Marmas.

### III. MARMABHIGHATA

Any Injury to Marma due to incision, stabbing, burning or external blow is termed as Marmabhighata which is mild or severe in nature[12]. In general, any type of Marmabhighata is likely to produce subjective manifestations governed by the extent and the nature of injuries to the Marmas. In dealing with the manifestations, more emphasis has been given on the consequences produced as a result of trauma.

Certain clinical features like Bhrama (confusion), Pralapa (delirium), Dourvalya (weakness), Chittanasha (lack of consciousness), Strastanga (restlessness), loss of sensation of parts, rise in body temperature, loss of function of the joints, unconsciousness, shallow breathing, severe pain, bleeding, loss of perception of senses, giddiness, paleness of the body, burning sensation over the cardiac area and postural un stability are commonly seen when Marmas are traumatized[13,14]. All
these symptoms are found in a condition where death is sure. Besides the general manifestation of the Marmabhīghata, following specific manifestations are observed when the body components like Mamsa, Sira, Snayu, Asthi and Sandhi marmas are injured[15].

Mamsa Marmra: continuous bleeding, reduced viscosity of blood, blood resembles like washed water of meat, pallor skin, loss of function of sense organs & speedy death.

Sira Marmra: Constant flow of thick blood in large quantity, their manifests thirst, giddiness, dyspnœa, delusion (confusion or fainting) and hiccups which ultimately leads to death. These symptoms are suggestive of cut injury to the blood vessels particularly veins.

Snayu Marmra: Ayama (contraction or bending) or atrophy of body, Akshepa (convulsion), Sitambah (stiffness of the body), Severe pain, inability in riding, sitting and standing, distortion of Snayu. Marmabhīghata is suggestive of injuries to nerve or nerve plexus. Most of the symptoms like rigidity, pain, convulsion etc are specific symptoms of nerve injury.

Asthi Marmra: Discharge of thin fluid mixed with bone marrow intermittently and severe pain continuously.

Sandhi Marmra: Sense of feeling of full of thorns at the site of injury, squeezing of organ or lameness even when wound is completely healed up, loss of strength and movement, emaciation or atrophy (affected body organ) and swelling or œdema of the Joints (distal).

Dhamani Marmra: Flow of warm, frothy blood with a sound and the person becomes unconscious.

Above all the sign and symptoms are results when Marma is injured. Apart from these, various sign and symptoms or some specific disease are produced in Individual Marma also[16].

Table 3: Consequence and patho-physiological changes resulting from trauma to specific Marma of lower extremity

| Sl. No. | Name of the Marma | Location | Consequential Prognosis |
|--------|-------------------|----------|-------------------------|
| 1      | Kshipra           | In between great toe and the second toe of the foot | Aksepaka (clonic spasm or convulsions) of the leg and ultimately leads to death |
| 2      | Tala Hridaya      | Mid of the sole of the foot (plantar aspect) to a straight line drawn from the root of the middle toe | Pain & Death |
| 3      | Kurcha            | Above and both sides of the Kshipra Marma | Shivering and bending deformity of the leg |
| 4      | Kurcha Sira       | Both sides of Gulpha Sandhi (ankle joints) | Pain and swelling of the affected part |
| 5      | Gulpha            | Junction of Pada (foot) and Jangha (leg) | Stabdhapada, Khanjata i.e. pain, rigidity or limping foot, and impotency |
| 6      | Indravasti        | Mid of the Jangha (leg) in the line of the Parsani (heel or calcaneum) | Excessive hemorrhage leads to death |
| 7      | Janu              | Junction of Jangha (leg) and Uru (thigh) | Limping or Lameness (difficulty in walking) |
| 8      | Ani               | Both the sides of lower one third part of the femur, three fingers above the Janu (knee joint) | Urusthambha (Enormous swelling and stiffness of the thigh) |
| 9      | Urvî              | Mid of the Uru (thigh) | Wasting of the Sakthi (atrophy of the arm and legs) due to loss of blood or diminished blood supply |
| 10     | Lohitaksha        | Root of fold of Uru (thigh), above the Urvî Marma and below the Vankshana Sandhi (Hip joint) | Pakshaghata (hemiplegic) and Shosa (atrophy of the whole inferior extremity due to loss of blood or diminished blood supply |
| 11     | Vitapa            | In between the Vanksana (Groin) and the Vrisana (Testis) | Rise impotency or oligospermia |

Table 4: Consequence and patho-physiological changes resulting from trauma to specific Marma of upper extremity
| Sl. No. | Name of the Marma | Location                                                                 | Consequential Prognosis                                                                 |
|--------|-------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1      | Kshipra           | In between thumb and the index finger                                  | Aksepa (clonic spasm or convulsions) of the hand and ultimately leads to death          |
| 2      | Tala Hridaya      | Mid of the palm at joining the line along with the middle finger       | Severe pain and death                                                                   |
| 3      | Kurcha            | Above on both sides of Kshipra Marma                                   | Shivering and bending deformity of the hand                                             |
| 4      | Kurcha Sira       | Below and one side of Manibandha sandhi (Wrist joint)                  | Pain and swelling of the affected part                                                  |
| 5      | Manibandha        | At the junction (wrist joint) in between palm of the hand and fore hand | Pain, rigidity or Kunitwa (Deformity)                                                   |
| 6      | Indravasti        | Mid of the fore arm facing to ventral aspect of the hand               | Excessive hemorrhage leads to death                                                     |
| 7      | Kurpura           | At the junction of the forearm and arm                                  | Permanent disability of the limb                                                        |
| 8      | Ani               | On both the sides, three Angula (finger) above the elbow joint         | Swelling, Stiffness or paralysis of the arm                                             |
| 9      | Bahvi             | In the mid of the arm                                                  | Wasting or atrophy of the arm due to loss of diminished blood supply                    |
| 10     | Lohitaksha        | At root of the upper extremity (brachium) adjacent to auxiliary fold and above the Bahvi Marma | Pakshaghata (hemiplegic) and Shosa (atrophy) of the whole upper extremity due to loss of blood or diminished blood supply |
| 11     | Kakshadhara       | In between the chest and arm pit                                       | Precipitates paralysis of the limb                                                      |

Table 5: Consequence and patho-physiological changes resulting from trauma to specific Marma of Head & Neck

| Sl. No. | Name of the Marma | Location                                                                 | Consequential Prognosis                                                                 |
|--------|-------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1      | Nila Manya        | High up in the neck on either side of the kantha nadi (trachea)         | Loss of speech, defective voice, loss of taste                                         |
| 2      | Matrika           | Anterior external, post external jugular veins and common facial veins  | Immediate death                                                                        |
| 3      | Krikatika         | Junction of head and neck                                               | Instability of neck and death                                                          |
| 4      | Vidhura           | Below and behind the ear                                                | Mookatwa (Mutism/Aphasia)                                                             |
| 5      | Phana             | Both side of nasal passage & near the roof of the nose                  | Loss of sense of Smell                                                                 |
| 6      | Apanga            | Outer side of orbits and below the lateral end of the Bhru (eyebrow)    | Andhatwa (Blindness or defective vision)                                               |
| 7      | Avarta            | Above and below the Bhru (eyebrow)                                      | Andhatwa (Blindness or impaired vision)                                                 |
| 8      | Sankha            | In between Karna (ear) and Lalata (forehead) and just above the termination of the superciliary arch | Immediate death                                                                       |
| 9      | Utkshepa          | Above the Sankha (temple) and near the hairy margin of the scalp (parietal region on the scalp) on both the sides of the head | Keeps the person alive till it lodges over theses or if it comes out after suppuration but he cannot survive if the Shalya (foreign body) is extracted out by force immediately after injury |
| 10     | Sthapani          | In between the Bhrus (eye brows or superciliary arches and underneath the bony vault) | Same as Utkshepa Marma                                                                  |
| 11     | Simanta           | Five structural Joints in the vault of skull                             | Unmada (insanity), Bhaya (Fear) and Chittanasa (Madness or lack of)                     |
Consciousness) leading to death

| Sl. No. | Name of the Marma | Location | Consequential Prognosis |
|---------|-------------------|----------|-------------------------|
| 12      | Sringataka        | Junction of the confluence of Siras (vein) providing nutrition to the Ghrana (nose), Shrotra (ear), Akshi (eyes) and Jivha (tongue) | Immediate death |
| 13      | Adhipati          | Inside the cranium superiorly at the confluence of Sira (vain). This point is just under the rohabert (ringlet of the hair) | Immediate death |

Table 6: Consequence and patho-physiological changes resulting from trauma to specific *Marma* of Thorax

| Sl. No. | Name of the Marma | Location | Consequential Prognosis |
|---------|-------------------|----------|-------------------------|
| 1       | Hridaya           | Superficially located in between Stana Granthi (breast) and near the opening of the Stomach | Immediate death |
| 2       | Stanamula         | Bilaterally two fingers below the Stana (breast) | Fills up the Kostha (thoracic cavity) with cough and proves to be fatal with troublesome cough & breathing |
| 3       | Stanarohita       | Two fingers above the Chuchuka (nipples) of both the Stana Granthi | Fills the cavity with blood and ends in death due to Kaph and dysponea |
| 4       | Apalapa           | Below the Amsakata (Sholder joint) and above the sides or lateral aspect of chest (in the axilla) | Hemorrhage leads to result in pus formation becomes fatal |
| 5       | Apasthambha       | Both the side of Ura (Chest) | Fills the chest with air and results in death due to Kapha and dysponea |

Table 7: Consequence and patho-physiological changes resulting from trauma to specific *Marma* of Abdomen

| Sl. No. | Name of the Marma | Location | Consequential Prognosis |
|---------|-------------------|----------|-------------------------|
| 1       | Guda              | Attached to Sthulantra (Large intestine) i.e. anal region | Immediate death |
| 2       | Vasti             | Within the Kati pradesha (Pelvis) i.e. bladder | Immediate death except an wound which is formed during extraction of a calculus |
| 3       | Nabhi             | In between Pakvashaya (Colon) and Amashaya (Stomach) i.e. umbilicus | Immediate death |

Table 8: Consequence and patho-physiological changes resulting from trauma to specific Marma of Back

| Sl. No. | Name of the Marma | Location | Consequential Prognosis |
|---------|-------------------|----------|-------------------------|
| 1       | Katikataruna      | Both the side of the Pristhavamsa (Vertebral column) corresponding to each Shroni kasthi (Hip bone) | Pallor, discoloration of skin due to hemorrhage or loss of blood |
| 2       | Kukundara         | Both the side of the Pristhavamsa (Vertebral column) and the lateral sides of the outer part of Jaghanasthi (femur) | Loss of sensation and movement in lower part of the body |
| 3       | Nitamba           | Above Shroni kanda (Hip bone) which covers the Ashaya (Viscera) and connects the lateral part of Vertebral column | Sosa (atrophy) in lower extremity with weakness leads to death |
| 4       | Parsvasandhi      | Just at the middle of Janghanaparsva bhaga (Gluteus region) and joining the | Death due to collection of blood in Pelvic cavity |
| SADHYA PRANAHARA MARMASA | Kalanter Pranahara Marma | Vaikalyakara Vishalaghna Marmas | Rujakara Marma |
|--------------------------|--------------------------|--------------------------------|---------------|
| 5  Brihati               | Posteriorly both side of the Prsthavamsa (Vertebral column) at the level of Stanamula (Base of the breast) | Excessive bleeding results into death | |
| 6  Amsa Phalaka          | In the upper part of the Prisha (back) near to the scapular region and on both the sides of vertebral column attached to Trika (Sacrum) | Sosa (Atrophy) of Bahu (Arm) | |
| 7  Amsa                  | In between the root of the arm and neck, joins the Amsa-peetha (Scapular region) and Skandha (Shoulder) together | Stiffness in upper extremity produces loss of function to the arm | |

3.1 EFFECT OF MARMABHIGHATA

If Sadhya Pranahara Marma gets injured it may leads to Kalantara Pranahar or death. If Kalantara Pranahara Marma gets injured it may lead to Vaikalyakara. If Vishalaghna gets injured it may lead to Vaikalyakara. If Vaikalyakara Marma gets injured It will leads to distress and pain after a certain period while Rujakara Marma injury leads to mild pain[17].

IV. DISCUSSION

The prognostic consequence of Marmabhigata is the patho-physiological changes precipitating over the concerned part of the body. The five categories like Sadhya Pranahara, Kalantar Pranahar, Vaikalyakara Vishalaghna, and Rujakara have been worked out based on the end results that one has to face soon after injuries over the Marmas. The consequences and the symptomatology point out the prognosis of the case are variable as per site and locations of the Marmas and its injury. It is apparent from the above said statement that if all the types of Marmas are injured extensively they may all prove fatal.

Trauma to Sadhya Pranahara Marmas results in inability of sense organs to perceive their respective subjects. Mind and intelligence can’t function properly and severe pain precedes the death. Fatal period of death is immediate or within seven days. It is noted that this group of Marmas possesses Agni Mahabhuta as fiery properties get very quickly inflamed and they prove fatal to the life. When Kalantara Pranahara Marma is injured, loss of Agni, Soma and Dhatus (blood etc) causes extreme pain leading to eventual death. Fatal time is 15 days to one month. As this group of Marmas possesses Agni as well as Saumya guna (properties), Agni guna gets inflamed rapidly but Saumya guna takes a considerable time in diminishing. Thus this group of Marmas prove fatal after some time of Injury. An injury to any of the Vaikalyakara Marmas produced permanent disability of the affected part. Death supervenes immediately or after some time. As this group of Marmas possesses Saumya guna, it supports the Prana by virtue of its stabilising and cooling properties. Injured Vishalaghna marmas causes Shwasa (Asthma), Kasa (Cough) and results in death. Death does not occur until weapon exists at site of entry. As soon as weapon is removed death occurs. Vishalaghna Marmas are Vataja in properties, so long as the Vata remains due to obstruction by the Shalya (foreign body) & patient survives. But as soon as the Shalya is extracted out, the Vata escapes from the Marma sthana and patient dies. Therefore, if the Shalya comes out after suppuration in Marmasthana then the patient can survive. Injured Rujakara Marmas gives rise to various types of pain or pain like condition in affected organs, which ultimately results in deformity of the same part. This group of Marmas are predominant in Agni and Vayu gunas. They are specially pain germinating in their properties. On the contrary, one says that the pain results from all Panchbhutas [18].

In another context Sushruta has further illustrated the presence of Trigunas, Mahagunas and the Bhootatma (Supreme power or life principle) in the Marmas also, where Soma (Jala Tatva), Maruta (Vayu Tatva), Teja (Agni Tatva) representing the Tridosas in the body and Satva, Raja, Tama as well as the Bhootatma are situated. Hence injuries to these Marmas are likely to result fatal[19].
The *Tridosha* in the body have got their *Pancha Bhautik* origin. The basic elements of *Pancha bhautik* are the main constituting component of *Tridosha*. It is seen in the above verse that the consequence of traumatised *Marma* has got direct bearing on the predominance of *Tridoshas* over there.

This description though gives more emphasis for the presence of *Sharirik dosha* and *Manasik dosha* at the site of *Marma* but in true sense both the *doshas* are purging all over the body. Any trauma to these *Marmas* are likely to provoke both the *Shareerik* and *Manasik dosha* which thereby affect the *Sharira & Mana* (body and mind) and thus when the base (body and mind) is afflicted the *Jeevatma or Bhootatma* itself ceased to be there.

Again, there are four types of *Siras* i.e., *Vata, Pitta, Kapha*, and *Rakta* carrying channels in the body. These channels remain seated in *Marma sthanas* and any injury to them may lead to death due to excessive loss of the blood and other body tissues resulting into aggravation of *Pitta* which in turn, causes increased thirst, emaciation, toxicity, unconsciousness, severe perspiration, weakness and looseness of body[20].

**V. CONCLUSION**

*Marma* have been taken up as a vulnerable points or weak point in the body which when gets injured or traumatized leads to fatality. In view of underneath body component structures like *Mamsa, Sira, Snayu, Asthi* and *Sandhi*, the *Marmas* have been accepted as a juncture of these structures. The *Marmabhighatata* on such structures are likely to precipitate the paralysis or atrophy or weaknesses in the limbs are over the areas supplied by them or other specific diseases or death arises. The consequences or the prognostic changes occurring due to trauma over these five types of *Marmas* are not due to predominance of *Doshas* or *Dhatus* present over the area concerned, but it is the *Swabhava* (natural inode quality) of that particular *Marma* which determines the end results. The intensity of trauma that decides the prognosis irrespective of structural components like *Mansa, Sira, Snayu* etc or functional elements like *Doshas*.

In present day of advance surgery, there should be clear-cut knowledge of vascular system, nervous system, muscles and their origin insertion, ducts and their courses, with a view to have an expertise operations on the patients. The ancient literature, no doubt, lacks with the knowledge of advance anatomical background in comparison to the present advances in the field. Though knowledge of anatomy and physiology of today have really removed the mystery of surrounding structure situated at the site of *Marmas* and minimized or made more less or nil the hazardous and dangerous task for surgeon. The concept of *Marma* described in ancient literature is possibly to make the subject matter more crystallized, based on the wide experience of expertise surgeons paying more attention towards the vital structures like arteries, veins, nerves tendons and ligaments. The surgeons based on their practical knowledge could map out the dangerous spots of the body and consequently postulate their own theory of *Marma*. This was the reason that made the surgery of ancient India to get more popularized and enabled it to achieve the highest position during the days of ancient civilization of the world.

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