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### Cross section study of *Undukapuchchha Utpatti*

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#### ABSTRACT –

Acharya Sushruta mentioned *Utpatti* of 'Unduka' from *Shonit Kitta*. The concept *kitta* have two different meanings. Firstly *Shonit kitta* means *shonit mala* i.e. *Pitta* and secondly *kitta* means *Asarbhag* of *shonit* i.e. degradation products of blood which can be analyze by Haemogram. For this study 87 pre-diagnosed patients appendicitis and 13 pre diagnosed patients of inflamed caecum selected. Haemogram and *Prakruti* of these patients analysed considering *Shonit kitta* concept. Statistically analysis shows that concept *shonit kitta* is regarding to *Pitta prakruti* and not related to degradation products of blood.

**Keywords:** *Shonit-kitta, Unduka, Undukapuchchha, Haemogram, Prakruti.*

#### INTRODUCTION –

Acharya Sushruta explains development of various organs in *sharir sthana*. Among these he explains *utpatti* of 'unduka' in *sharir sthana adhyaya* four.

In this *adhyaya*, *utpatti* of various important organs like heart, lungs, liver are described effectively. Here *utpatti* of *unduka* is also mentioned by Acharya Sushruta i.e.-

शोणितकिट्ट प्रभवः उण्डुकः । सु. शा ४ / २५

It means that *Unduka* develops from 'shonit kitta'. As we compare development of Liver according to Ayurveda. Acharya's have opined about the genesis of 'Yakruta' ( Liver ) from *Rakta Dhatu* ( blood tissue ). Parallel opinion in conventional anatomy states that abundant quantity of blood is responsible for the formation of sinusoids of liver. But it is not similar in case of *unduka*. Because according to modern embryology Caecum is formed from caecal bud arising from the post-arterial segment of midgut loop. And it cannot be correlated with *shonit -kitta* concept of Ayurveda.

So to study *utpatti* of *Unduka* – understanding the concept of *shonit kitta* is a very necessary thing.

The word *shonit* means blood. Now, two concepts of Ayurveda arises in mind about *Shonit- kitta-*

- 1) किट्ट : रक्तधातोः मलः पित्तम् ।  
आयुर्वेदीय - शब्दकोशः ।

If we consider the word *kitta*, it means 'Mala'. Then *shonit kitta* means *pitta*. It means *unduka* is formed from *pitta*.

- 2) किट्ट : असारभागः ।  
आयुर्वेदीय - शब्दकोशः ।

If we consider *Asarbhadg* as a degradation product of blood, composition and fate of blood cells should be studied in detail.

Blood is basically red colored liquid which circulates in our body. Blood is connective tissue, consist of four things namely Plasma, Red blood corpuscles, white blood corpuscles and platelets. So the concept of *shonit kitta* is also studied by analysis of Hemogram.

The organ '*unduka*' is compared to caecum by modern science and *undukapuchchha* with appendix. To study *utpatti* of *unduka*, Hemogram in pathological condition of *unduka* will be observed. But prevalence rate of inflamed Caecum is very low. Compared to this, inflammation of appendix is very commonly found condition. As appendix is attached part of Caecum; they both have same embryological development and histological layer, hence appendicitis patients can also be considered here.

The vermiform appendix is considered by most to be a vestigial organs, it's importance in surgery results only from its propensity for inflammation, which results in the clinical syndrome known as acute appendicitis. Appendicitis is one of the commonest cause of acute abdomen encountered in surgical practice.

For appendicitis, Alvarado score is most widely used. When the score is 7 or more it is a case of acute appendicitis and immediate operation is required. When the score is 5 to 6, these are borderline cases. There is huge scope for the Ayurvedic medicine to treat primary and chronic cases of appendicitis. These cases are treated with antibiotics and conservative treatment by modern science aspect. But if we consider *utpatti* of *unduka*, *Rakta-gamitva* or *Pitta-gamitva dravya* may used in such conditions. Regarding *utpatti* related treatment, study of concept of *shonit kitta* is necessary.

#### AIM :-

To study '*Unduka puchchha utpatti*'.

#### Objective :-

- To study '*Unduka puchchha utpatti*' with special reference to Appendicitis.
- To study of '*unduka puchchha utpatti*' by means of *ayurvedic* literature.
- To study of '*unduka puchchha utpatti*' by means of modern literature.
- To study the co-relation between *ayurvedic* and modern aspect of embryological development of appendix.

## MATERIALS AND METHODS :

### Materials :-

For observational clinical study,

Pre-diagnosed patients of Appendicitis and inflamed caecum. Their *prakruti* and Red cell absolute count of Haemogram observed and analysis done.

### Methods :-

#### 1 ) Literature Review :-

Ayurvedic literature

- a) Study of *Unduka, Undukapuchchha.*
- b) Study of *Rakt dhatu* .
- c) Study of *Avayav utpatti* according to *Sushruta*
- d) Study of correlation between *Shonit kitta* and *Unduka utpatti*.

Modern Literature

- a) Study of Anatomy, Physiology and Embryology of caecum and appendix.
- b) Study of *Unduka utpatti* concept with the help of appendicitis and inflamed caecum patients.

#### 2 ) Observational Clinical Study :-

- a) 87 pre-diagnosed patients of appendicitis and 13 pre-diagnosed patients of inflamed caecum.
- b) Individual case papers were prepared containing *prakruti* related information and haemogram which reflects degradation products of blood. Investigation like ultrasonography were studied to observe anatomical changes.

Collected data has been studied and presented in order to understand if there is any correlation between abnormal values of Red cell absolute count of Haemogram observed in patients of appendicitis and inflamed caecum mentioned in *Sushrut Samhita* and reference to the develops of *Unduka*.

### Criteria for assessment :-

Patient's criteria :

#### 1) Inclusion criteria :

- a) Pre-diagnosed patients of Appendicitis and inflamed caecum have been selected
- b) All stages of appendicitis will be included.
- c) Both genders were included.
- d) All age group will be included
- e) Sample size was taken 100 .

#### 2) Exclusion Criteria :

- a) Patients having Hb less than 10 mg/dL.

## METHODOLOGY

100 pre- diagnosed patients of appendicitis and inflamed caecum were selected as per the selection criteria mentioned above.

The case record form or case paper of each patient was divided into three parts.

1<sup>st</sup> part :- consisted of general information like name of patient, sex, age etc

2<sup>nd</sup> part :- consisted of data regarding *prakruti* .

3<sup>rd</sup> part :- consisted of data regarding haemogram of patients studied.

Ultrasonography report of each patient was noted.

## RESULTS-

After observing the data calculations, statistics were carried out. Pitta prakruti people are found more prone toward Unduka and Undukapuchchha related pathological condition. But in Haemogram of these patient not significant lower values found.

## OBSERVATIONS –

### Prakruti :

Prakruti	Frequency	Percent
PK	21	24.1
VK	6	6.9
VP	60	69.0
Total	87	100.0

### PCV :

PCV	Frequency	Percent
Below 40	21	24.1
40 to 54	66	75.9
Above 54	0	0.0
Total	87	100.0

### MCV :

MCV	Frequency	Percent
Below76	7	8.0
76 to108	80	92.0
Above108	0	0.0
Total	87	100.0

### MCH :

MCH	Frequency	Percent
Below27	54	62.1

27 to 38	33	37.9
Above38	0	0.0
Total	87	100.0

### MCHC :

MCHC	Frequency	Percent
Below32	50	57.5
32 to 38	37	42.5
Above38	0	0.0
Total	87	100.0

## DISCUSSION –Prakruti

The sample for this study was randomly selected. And there prakruti wise analysis done with the help of point given in ayurvedic samhita's. In case of inflamed caecum patients majority of patients having Vat-Pitta prakruti i.e. 69.2%, then 23.1% having Pitta -Kapha prakruti and very less i.e. 7.7 % patients having Vata- kapha prakruti. From above data, conclusion drawn that Pitta Pradhan patients were prone toward inflamed caecum condition or vice-a-versa unduka related pathology found more in pitta prakruti people. As it's utpatti related to shonit kitta ( shonit kitta – pitta .)

Similarly randomized selected appendicitis patients observed for there prakrutis. 69% patients found of Vat-Pitta, 24.1% found of Pitta-Kapha and very few i.e. 6.9% were found of Vat-

Kapha prakruti's. So conclusion drawn that Pitta prakruti people were more prone toward appendicitis.

#### A) Hb

About 76.9% of patients of inflamed caecum shows Hb below than 13. In given sample obtained average value is 12.49 and lower standard value is 13. So p value found is 0.119 which is greater than 0.05. In appendicitis patients, about 50.6% patients shows Hb less than 13 ; 49.4 % shows in between 13- 18 value. So average value obtained by data is 13.1954. So P value is 0.145 which is greater than 0.05, null hypothesis is accepted here.

#### B) PCV

About 84.6% of patients of inflamed caecum found PCV in between range of 40-54. Mean obtained by data is 44.9615. Applying 't' test p value found 0.003. Mean value suggested that average PCV is greater than it's lower standard value on an average. About 75.9% of appendicitis patients found PCV in between range 40-54 by data. Mean value obtained is 43.4517. Here p value is 0.000 by 't' test. There is significant difference in value of PCV and it's lower standard value on an average. As average value is greater than lower standard value.

#### C) MCV

About 100% of inflamed caecum patient having MCV value in between 76-108. Mean found was 84.4762. p value is 0.00. But mean value suggest that average MCV is greater than it's lower standard value on an average. As MCV is defined as mean corpuscular volume of an average RBC, which is not found less in inflamed caecum patients. About 92% of appendicitis patients having MCV in normal range i.e.76-108. Applying 't' test there is no any correlation between lower standard value and mean values of MCV.

#### D) MCH

About 53.8% of inflamed caecum patients having MCH value below 27. Mean value obtained is 28.417.. So there is no any association between average value and lower standard value. 62.1 % of the appendicitis patients having MCH value below 27. Mean value obtained by data is 26.8714. So there is no significant difference found in an average value and lower standard value of MCH. Though the values found less in observation of 100 patients according to 't' test p value is not significant.

#### E) MCHC

53.8% of patients of inflamed caecum having MCHC value below 32. Mean

obtained by data is 32.5062. Applying 't' test p value is 0.264.57.5 % of appendicitis patients having MCHC value below 32. Mean obtained by data is 31.9499. But it is not so further than lower standard value. In case of appendicitis patients, although MCHC average value found lower than lower standard value, but statistically it is only limited to sample size of this study and not applicable to the population.

#### CONCLUSION –

- Pitta Pradhan people are more prone towards unduka and undukapuchchha related pathological condition, so it is associated with 'utpatti' of unduka i.e. shonit kitta as pitta.
- There is no significance difference between lower standard value and mean value obtained by observational data in case of Hb, MCH, MCHC. In case of PCV, MCV mean values are found greater than lower standard values. So conclusion can be drawn that there is no association between lower standard value and average value of Red Cell Absolute count in appendicitis and inflamed caecum patients.

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