



OBSERVATIONAL STUDY TO ASSESS ROLE OF AHARAA IN THE GENESIS OF HRIDROG (IHD)

Research article

¹Masodker Pankaj ²Priyanka Mhaske ³Vyas Antim ³Pawar Shivaji

¹Associated Professor (Rog nidan evam Vikruti vigyan) , S.A.M.C & H, Indore (M.P.),

²Assistant Professor, Shubhdeep College of Nursing, Indore (M.P.), Associated Professor (Koumarya britya) ³Professor (Samhita sidhdhant), S.A.M.C & H, Indore (M.P.).

ABSTRACT

Hridrog (ischemic heart disease) is one of the major causes for morbidity and mortality in the entire world. *Hridrog* (IHD) has become a worldwide health problem in all economical groups of society and is responsible for 13 million of deaths per year in the entire world according to WHO. The mortality due to cardiovascular disease ranges from 15-16% in the developed and developing countries out of which most of deaths occur due to IHD. The Etiological factors of *Hridrog* according to Ayurveda, describe three categories, *Aharaj* (dietetic factors), *Viharaj* (somatic factors) and *Manasika* (psychological factors). Modern Medicine on the other hand, based on clinical and experimental evidence puts the blame on food containing large amounts of saturated fat, and cholesterol and cigarette smoking and stress and strains of modern sophisticated life. In the presence of above the etiological factors the *Doshas* get vitiated and get accumulated in *Hriday* and vitiate *Rasa*, produce *Hridrog*. Ayurveda has its own unique and fundamental concepts and principles to prevent and cure the diseases, such as *Nidan parivarjana*. *Aharaj Nidan parivarjana* means remove of *Aharaj hetu* that genesis the diseases. It is fundamental and fist line treatment to treat the diseases in which strict *Aharaj* plan to be followed according to *nidan* (causes of disease), *prakruti*, *ritu* (season), *desh* (place), *kala* (time) to cure the diseases. The positive solutions can be obtained and achieved by the Principal of Ayurveda hence in this present study 60 patients of IHD to observe the *Aharaj nidan* by *Aharaj* questionnaire “Observational Study to Assess Role of Ahara in the Genesis of *Hridrog* (IHD)” is a humble effort in this direction.

Key Words: *Aharaj nidan, Hridrog, Nidan parivarjan.*

INTRODUCTION: All science of universe needs their own basic principles, definition, classifications and theories for their explanations. Those sciences that have the solid foundation of basic principles and theories only withstand with the time; Ayurveda is one of them. Ayurveda is a system of medicine and it emphasizes on healthy and enlightened lifestyles^{1,2}. Due to lack of time, people do not have time for food and other necessary daily tasks. Ayurveda explains dietary

habits in the manifestation of heart diseases^{3,4}. Ischemic heart diseases are increasing day by day entire world due to incorrect dietary habits⁵ so current scenario cardinal symptoms of IHD are included under *Hridrog*. Therefore, in this study trying to find out the *Aharaja nidana* (dietary causes) of heart disease in the current scenario.

Heart is the vital organ and seat of important body constitutes like *Oja*⁶, *Vyan vayu*⁷ *Sadhak pitta*,⁸ *Avalmbak kapha*⁹ and

*Mulasthana of Pranvaha & Rasavaha srotas*¹⁰ which regulates important and involuntary functions of heart.

The Etiological factors of *Hridrog* according to Ayurveda, describe three categories, *Aharaj* (dietetic factors), *Viharaj* (somatic factors) and *Manasika* (psychological factors). When *Ahara*, *Vihara* & *Manasika etiological factors* are consumed, *Hridroga* arise in the following stages: 1. Consuming the *Ahara-vihara* that cause *Hridroga* disease leads to formation of vitiated *Tridosha* *its in own place* this vitiated *Tridosh* afflicts *Jatharagni* hence produce the *Samaras* and simultaneously *Kha Vaigunya* occurs in the heart. 2. Vitiated *Tridosha* with *Samaras sthan sanshraya* at the *Kha Vaigunya*. 3. *Kha Vaigunya* occurs in *Rasavaha* and *Pranavaha Srotas* for which respective *dhatus* and *mulasthana* of *srotas* are vitiated, leads to various types of heart diseases according to such type of *Srotodushti* vice *Sanga-vimargagaman*¹¹. In spite of the fact that due to wide spread health awareness, development of newer concepts, drugs, establishment of heart clinics, institutes and coronary care units, the *Hridrog* remains to be the cause of maximum death throughout the world, particularly in the developed countries¹⁶. It appears from this fact that there is still much scope to improve upon the concept as well as the practice of medicine in this area. With this hope several long-term projects have been installed for clinical observations and they are bound to deliver good results also.

It will not be fair to blame the modern life-style and simply turn our backs to it. The Ayurveda, as a complete science of life, can provide a solution to this situation. It is the duty to come forward to study the effects of changes in diet and come up

with the solutions. The present study “Observational Study to Assess Role of *Ahara* in the Genesis of *Hridrog* (IHD)” is a humble effort in this direction. The positive solutions can be obtained and achieved by the Principal of Ayurveda.

AIM AND OBJECTIVES OF THE STUDY:

Aim: -

- To Assess Role of *Ahara* in the Genesis of *Hridrog* (IHD)

Objectives: -

- To study of *Hridrog* (IHD) as per Ayurveda and Modern science.
- To Preparation of *Aharaj* questionnaire.
- To assess role of *Ahara* in the genesis of *Hridrog* (IHD)

INCLUSION & EXCLUSION CRITERIA:

For any study appropriate data/specimens are required to get accurate results. Hence for this study following inclusion and exclusion criteria have been adopted for selecting the patients and obtaining data from them.

Inclusion criteria

- Patients age between 25-60 years of either sex.
- Diagnosed patients of *Hridrog* (IHD).

Exclusion criteria

- Patients age below 25 and above 60 years.
- Patients undergoing treatment for any other serious illness.
- Patients suffering from congenital heart diseases.

MATERIAL AND METHOD:

Material

- Diagnosed 60 patients of ischemic heart disease.
- *Aharaj* questionnaire.

Methodology

- STUDY DESIGN:** - Cross-sectional observational studies have been used.
- Method of subject's selection:** - Simple randomize sampling.
- All the collected data statistically analyzed by Chi Square test (Goodness of fit).
- As per the above inclusion & exclusion criteria well diagnosed 60 patients of ischemic heart disease have been selected from fallowing OPD, IPD and camps: 1. OPD and IPD of L.R.P. Ayurvedic Medical College, Hospital, P.G. Institute & Research Centre. 2. The

patients from various clinical camps organized by the Institute have been also considered for the study.

- In this study written consent of patient have been obtained for the participation in this research work.

To know about *Hridrog* etiology a questionnaire has prepared according to causes of *Hridrog*^{4,13}. Each question of questionnaire has given four options A-No, B- Mild, C- Moderate and D- Severe and scoring have been done 0, 1,2 and 3 respectively.

Table No. 1 Questionnaire on Ahara:

| Questionnaire on Ahara :- | |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Q. No 1. | How many times in a week you consume alcohol? |
| Q. No 2. | How many cigarettes you smoke in a day? |
| Q. No 3. | How many times in a week you chew tobacco? |
| Q. No 4. | How many times in a day you drink tea/coffee? |
| Q. No 5. | How many times in a week you have oily diet (i.e. <i>puri, paratha, bhajiya</i> etc.)? |
| Q. No 6. | How many times in a week you consume junk food, fast food and product of <i>maida</i> etc.(very fine grounded wheat flour)? |
| Q. No 7. | How many times in a day you consume preserved or refrigerated meal? |
| Q. No 8. | How many times in a week you consume cold drink, ice cream, cold coffee etc.? |
| Q. No 9. | Do you consume meal without feeling hunger (i.e. <i>Adhyashana</i>)? |
| Q. No 10. | How many times in a week you do fasting (i.e. <i>Anshana</i>)? |
| Q. No 11. | How many times in a week you consume <i>Virudha Ahara</i> .? |

- Each patient
 - Answers of the questionnaire are collected for finding and observing the *Hridrog hetu*.
 - All the data from questionnaire is summarised, tabulated and statistically analysed to draw the conclusion.

OBSERVATION:

Tables of patients according to questionnaire on Ahara:

Q.1.The data obtained from questionnaire regarding the consumption of alcohol is tabulated in Table No-2 as fallows-

Table 2: Distribution of patients according to consumes of alcohol in a week:

| Consumption of Alcohol | No. of patient | Percentage |
|-------------------------------|-----------------------|-------------------|
| No/Occasionally | 17 | 28.33 |
| 1-2 times/week | 4 | 6.67 |
| 3-4 times/week | 20 | 33.33 |

| | | |
|-------------------------|-----------|---------------|
| 5-6 times/week or daily | 19 | 31.67 |
| Total | 60 | 100.00 |

The table patients in percentage distributed according to their habits of consuming alcohol in a week as follows
No/Occasionally-28.33%, 1-2 times/week-

6.67, 3-4 times/week-33.33 and 5-6 times/week or daily 31.67%.

Q.2.The data obtained from questionnaire regarding smoking habit is tabulated in Table No-3 as follows-

Table 3: Distribution of patients according smoking cigarette:

| Smoking | No. of patient | Percentage |
|---------------------------|-----------------------|-------------------|
| No/Occasionally | 35 | 58.33 |
| 1-2 cigarette/day | 12 | 20.00 |
| 3-4 cigarette/day | 5 | 8.33 |
| 5-6 cigarette/day or more | 8 | 13.33 |
| Total | 60 | 100.00 |

The table patients in percentage distributed according to their habits of smoking cigarette in a day as follows
No/Occasionally- 58.33, 1-2 cigarette/day- 20.00, 3-4 cigarette/day- 8.33

And 5-6 cigarette/day or more - 13.33.

Q.3.The data obtained from questionnaire regarding of tobacco uses is tabulated in Table No-4 as follows-

Table 4 : Distribution of patients according to tobacco uses: -

| Tobacco chewing | No. of patient | Percentage |
|------------------------|-----------------------|-------------------|
| No/Occasionally | 9 | 15.00 |
| 1-2 times/day | 4 | 6.67 |
| 3-4 times/day | 20 | 33.33 |
| 5-6 times/day or more | 27 | 45.00 |
| Total | 60 | 100.00 |

The table patients in percentage distributed according to their habits of tobacco uses in a day as follows No/Occasionally - 15.00, 1-2 times/day - 6.67, 3-4 times/day - 33.33 and 5-6 times/day or more - 45.00.

Q.4.The data obtained from questionnaire related to habit of drinking tea/coffee is tabulated in Table No-5 as follows-

Table 5: Distribution of patients according to drinking tea/coffee:

| Tea/coffee | No. of patient | Percentage |
|-----------------------------|-----------------------|-------------------|
| No/Occasionally | 2 | 3.33 |
| 1-2 times /day | 10 | 16.67 |
| 3-4 times/day | 35 | 58.33 |
| 5-6 times or more times/day | 13 | 21.67 |
| Total | 60 | 100.00 |

The table patients in percentage distributed according to their habits of drinking tea/coffee in a day as follows
No/Occasionally-3.33, 1-2 times /day-

16.67, 3-4 times/day-58.33 & 5-6 times or more times/day -21.67.

Q.5.The data obtained from questionnaire related to having oily diet is tabulated in Table No-6 as follows-

Table 6 : Distribution of patients according to consumes oily diet:

| Oily diet | No. of patient | Percentage |
|-------------------------|----------------|---------------|
| No/Occasionally | 25 | 41.67 |
| 1-2 times/week | 28 | 46.67 |
| 3-4 times/week | 4 | 6.67 |
| 5-6 times/week or daily | 3 | 5.00 |
| Total | 60 | 100.00 |

The table patients in percentage distributed according to their habits of oily diet in a week as follows No/Occasionally-41.67, 1-2 times/week -46.67, 3-4 times/week- 6.67 & 5-6 times/week or daily- 5.00.

Q.6.The data obtained from questionnaire related to having junk food, fast food and maida etc. is tabulated in Table No 7 as follows-

Table 7 : Distribution of patients according to consumption of junk food, fast food and maida etc:

| Consuming junk food, fast food & maida | No. of patient | Percentage |
|----------------------------------------|----------------|---------------|
| No/Occasionally | 49 | 81.67 |
| 1-2 times/week | 10 | 16.67 |
| 3-4 times/week | 0 | 0.00 |
| 5-6 times/week or daily | 1 | 1.67 |
| Total | 60 | 100.00 |

The table of patients in percentage distributed according to their habits of consuming junk food, fast food and maida etc. in a week as follows No/Occasionally- 81.67, 1-2 times/week-16.67, 3-4

times/week 0.00 & 5-6 times/week or daily-1.67.

Q.7.The data obtained from questionnaire related to consumption of preserved or refrigerated meal is tabulated in Table No- 8 as follows-

Table 8: Distribution of patients according to consumes preserved or refrigerated meal:

| Consuming preserved or refrigerated meal | No. of patient | Percentage |
|------------------------------------------|----------------|------------|
| No/Occasionally | 15 | 25.00 |
| 1-2 times /day | 3 | 5.00 |
| 3-4 times /day | 31 | 51.67 |
| 5-6 times/day or more | 11 | 18.33 |

| | | |
|--------------|----|--------|
| Total | 60 | 100.00 |
|--------------|----|--------|

The table patients in percentage distributed according to their habits of consuming preserved or refrigerated meal in a week as follows No/Occasionally-25.00, 1-2 times /day-5.00, 3-4 times /day-51.67 & 5-6 times/day or more - 18.33.

Q.8.The data obtained from questionnaire related to drinking of cold drinks, ice cream and cold coffee etc. is tabulated in Table No-9 as follows-

Table 9: Distribution of patients according to drinks cold drinks, ice cream, cold coffee etc:

| Consuming cold drinks/ice cream/cold coffee etc. | No. of patient | Percentage |
|---------------------------------------------------------|-----------------------|-------------------|
| No/Occasionally | 41 | 68.33 |
| 1-2 times/week | 10 | 16.67 |
| 3-4 times/week | 3 | 5.00 |
| 5-6 times/week or daily | 6 | 10.00 |
| Total | 60 | 100.00 |

The table patients in percentage distributed according to their habits of drinking cold drinks, ice cream and cold coffee etc. in a week as follows No/Occasionally- 68.33, 1-2 times/week-16.67, 3-4 times/week- 5.00 & 5-6 times/week or daily-10.00.

Q.9.The data obtained from questionnaire related to having meal without feeling hunger in a week i.e. adhyashana is tabulated in Table No-10 as follows-

Table 10: Distribution of patients according to consumes meal in a week without feeling hunger i.e. adhyashana:

| Number of meals in a week without feeling hunger i.e. adhyashana | No. of patient | Percentage |
|-------------------------------------------------------------------------|-----------------------|-------------------|
| No/Occasionally | 53 | 88.33 |
| 1-2 times/week | 5 | 8.33 |
| 3-4 times/week | 2 | 3.33 |
| 5-6 times/week or daily | 0 | 0.00 |
| Total | 60 | 100.00 |

The table shows patients in percentage distributed according to their habits of consuming meal without feeling hunger (i.e. Adhyashana) in a week as follows No/Occasionally-88.33, 1-2 times/week -

8.33, 3-4 times/week-3.33 & 5-6 times/week or daily-0.00.

Q.10.The data obtained from questionnaire related to number of fasting (i.e., anashana) in a week is tabulated in Table No-11 as follows-

Table 11: Distribution of patients according to number of fasting (i.e. Anashana) in a week:

| Anashana | No. of patient | Percentage |
|-------------------------|----------------|---------------|
| No/Occasionally | 36 | 60.00 |
| 1-2 times/week | 24 | 40.00 |
| 3-4 times/week | 0 | 0.00 |
| 5-6 times/week or daily | 0 | 0.00 |
| Total | 60 | 100.00 |

The table shows patients in percentage distributed according to number of fasting (i.e. anashana) in a week as follows
No/Occasionally - 60.00, 1-2 times/week-

40.00, 3-4 times/week-0.00 & 5-6 times/week or daily -0.00.

Q.11. The data obtained from questionnaire related to having *virudha ahara* in a week is tabulated in Table No-12 as follows-

Table 12: Distribution of patients according to consumption of *virudha ahara* in a week:

| Consuming <i>virudha ahara</i> in a week | No. of patient | Percentage |
|------------------------------------------|----------------|---------------|
| No/Occasionally | 7 | 11.67 |
| 1-2 times/week | 14 | 23.33 |
| 3-4 times/week | 34 | 56.67 |
| 5-6 times/week or daily | 5 | 8.33 |
| Total | 60 | 100.00 |

The table shows patients in percentage distributed according to their habits of consuming *virudha ahara* in a week as

follows No/Occasionally-11.67, 1-2 times/week-23.33, 3-4 times/week -56.67, 5-6 times/week or daily-8.33.

ANALYSIS AND RESULTS

The results are tabulated as follows-

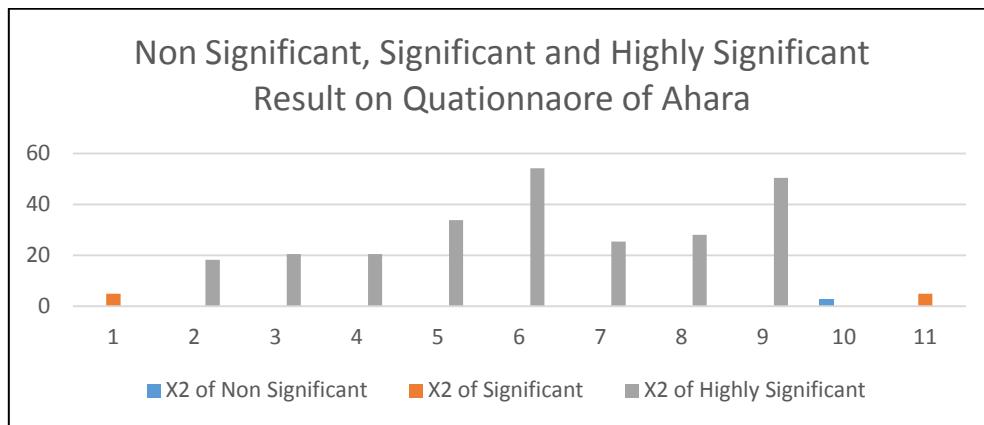
Table Number: 13. Results summary of Chi Square Test (goodness of fit) on Ahara questionnaire: -

| S. No. | Q. No | X ² | P | Result |
|--------|-------|----------------|--------|--------------------|
| 1 | 1 | 11.067 | 7.815 | Significant |
| 2 | 2 | 18.15 | <0.001 | Highly significant |
| 3 | 3 | 20.417 | <0.001 | Highly significant |
| 4 | 4 | 20.41 | <0.001 | Highly significant |
| 5 | 5 | 33.75 | <0.001 | Highly significant |
| 6 | 6 | 54.15 | <0.001 | Highly significant |
| 7 | 7 | 25.35 | <0.001 | Highly significant |
| 8 | 8 | 28.017 | <0.001 | Highly significant |
| 9 | 9 | 50.417 | <0.001 | Highly significant |

| | | | | |
|----|----|-------|--------|-----------------|
| 10 | 10 | 2.817 | =0.093 | Non-significant |
| 11 | 11 | 4.817 | =0.028 | Significant |

The table shows results summary of Chi Square Test on Ahara.

Graph No. 1. Non-significant, Significant and Highly Significant result on questionnaire of Ahara:-



Graph shows the Non-significant, Significant and Highly Significant result on questionnaire of Ahara

In this study on the basis of consume Ahara as alcohol, smoking, tobacco, tea/coffee, oily diet, fast and junk food, refrigerated meal, consume cold drink, ice cream, cold coffee, consume meal without feeling hunger are highly significant, virudha ahara is significant and fasting is non-significant.

DISCUSSION:

Discussion on questionnaire on Ahara.

1. Consumption of Alcohol: - From the statistical analysis Table-2 it is found that the consumption of alcohol is the significantly contributing factor for *Hridrog* (IHD). Hence it can be concluded that the consumption of alcohol is still the significantly contributing factor for *Hridrog* (IHD).

Madya causes *Ojas Kshaya*, *Rakta Dushti*, *Dhatu Kshaya*, *Tridosha Prakopa* and *Mana Dushti*. All these are important factors in the genesis of *Hridrog*. The heat produced by alcohol leads to abnormal nourishment of *Sira* (*Sira* are nourished by *Mrudu Paka* of *Sneha* of *Meda*; Alcohol

leads to *khara paka*) which contributes to the formation of *Hridrog*.

2. Smoking: - From the statistical analysis Table-3 it is found that the smoking is the contributing factor for *Hridrog* (IHD). Cigarette smoking continues to be a major health hazard, and it contributes significantly to cardiovascular diseases. *Rakta ojas*, *prana vayu vikruti* due to frequently smoking affected *raktavaha*, *pranavaha srotas* because seat of *ojas*, *mana* and *mulasthana* of *rasavaha*, *pranavaha srotas* is *hridaya* so it cause *Hridrog*.

3. Tobacco chewing:- From the statistical analysis Table-4 it is found that the tobacco chewing is the significantly contributing factor for *Hridrog* (IHD). Tobacco contains nicotine that is directly mixed in blood and causes *rakta*, *pitta*, *mana* and *ojas vikruti*. *Hriday* collect *Rasa* (*vikruti rakta* and *pitta*) and circulate all over body, because *hridaya* is seat of *mana*, *ojas*, *sadhak pitta* and *mulasthana* of *rasavaha*, *pranavaha srotas* so it might cause *Hridrog* (IHD).

4. Consuming Tea/coffee:- From the statistical analysis Table-5 it is found that

the consuming tea/coffee is the significantly contributing factor for *Hridrog* (IHD). these may prove to be contributing *hetu*. These liquids are usually found to be *hetu* of *Mandagni* which can lead to *Rasa Dushti*.

5. Oily diet (*Poori, Paratha, Bhajiya*, etc.): From the statistical analysis Table-6 it is found that the consuming oily diet is not the contributing factor for *Hridrog* (IHD). Oily food can cause *Meda vruddhi* as well as can contribute in the *dushti* of *Sira* (The association of *Meda* with nourishment of *sira* has been described above). The insignificant number of patients associated with this *hetu* can be attributed to the socio-economic reason as well as the rural nature of the *desh* where this study has been done.

6. Having of junk food, fast food & maida etc.:- From the statistical analysis Table-7 it is found that the consuming junk food, fast food & maida etc. is not the contributing factor for *Hridrog* (IHD). Junk food, Fast food etc. have been a regular feature of the Modern Lifestyle. Fortunately, it seems that it has not affected the rural area to that extent. Hence, the occurrence of this *hetu* is very limited in the patients of *Hridrog* studied in this study.

7. Consuming preserved or refrigerated meal: - From the statistical analysis Table-8 it is found that the consuming preserved or refrigerated meal is the significantly contributing factor for *Hridrog* (IHD). Refrigeration is considered by many as a blessing of the modern times. The convenience it provides is beyond arguments. But it leads to a *hetu* which remains unknown to most of the people. Ayurveda clearly says that food should be consumed fresh and should never be reheated. Refrigeration causes opposite of

it, which leads to *Agni Vikruti* and hence may lead to *Ama* formation, *Rasa Dushti* and hence can be contributing factor for *Hridrog*.

8. Consuming Cold drinks, Ice cream and cold coffee etc.: - From the statistical analysis Table-9 it is found that the consuming cold drinks, ice cream and cold coffee etc. is the not the contributing factor for *Hridrog* (IHD). Ice cream can cause *kapha prakopa*, *Mandagni* and hence *Ama* formation due to *Snigdha, Sheeta* and *Guru gunas*. The Cold drinks are usually aerated drinks which contain carbonic acid. These are usually *Amla, Ushna* and *Drava* by *guna* and therefore usually responsible for *Pitta Prakopa, Mandagni* (by *drava guna*) and *Rakta dushti*. They can also be responsible for *Dhatu shaithilya* due to *Amla Rasa* and *Ushna Virya*. Fortunately, because of rural area, these have not been found in regular consumption of the subjects of this study.

9. Having meal without feeling hunger i.e. *Adhyashana*:- From the statistical analysis Table-10 it is found that the having meal without feeling hunger is not the significantly contributing factor for *Hridrog* (IHD). Hence statistically it can be concluded that the having meal without feeling hunger meal is still not the contributing factor for *Hridrog* (IHD) in the present era.

10. Fasting i.e. *Anashana*:- From the statistical analysis Table-11 it is found that the fasting is not the significantly contributing factor for *Hridrog* (IHD). Hence statistically it can be concluded that the fasting is still not the contributing factor for *Hridrog* (IHD) in the present era.

11. *Virudha Ahara*:- From the statistical analysis Table-12 it is found that the consuming *virudha ahara* is the significantly contributing factor for

Hridrog (IHD). *Virudh ahara* that is responsible for *dosh prakopak*, bigger trigger factor and *hetu* of *Hridrog* so frequent use of *virudha ahara* might be responsible for *Hridrog*.

CONCLUSION: *Ahara* is the main source to nourishes *dhatu* for sustenance of life. Improper *Ahara* manifests the different type of diseases, *Hridrog* is one of them. So, this is very important to correct food habits, for this after analysis we concluded that most responsible *hetues* are Alcohol, smoking, chewing tobacco, preserved or refrigerated meal, consuming alcohol, having tea/coffee, oily diet, junk food, product of maida, Cold drink, ice cream/cold coffee, *adhyashana* and *virudha Ahara* for the genesis of *Hridrog* (IHD) rather than *Anshan*.

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Corresponding Author: Dr. Pankaj Masodker, Associated Professor (Rog nidan evam Vikruti vigyan), S.A.M.C & H, Indore (M.P.),

Email: masodker.pankaj@gmail.com

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