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A pilot study on correlation of *Hetus of Kapha Avrutta Vata* and hypothyroidism.

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Abstract-

Hypothyroidism is posing major challenge both in developing and developed world. Sedentary lifestyle making people more vulnerable to thyroid related diseases. Thyroid regulates metabolism of body. Failure of thyroid hormone to meet the metabolic need of the body results in hypothyroidism. In many articles hypothyroidism is describing as a*anuktavyadhi. Hetu* has much more importance in our texts. The majordiseases can be avoided if we have the proper knowledge of *hetu*. If the *hetus* of any specific disease are known the way of treatment becomes easy. Understanding the concept of *hetu* can lead to healthy and balanced diet. Finding cause (*hetu)* is more important as rather than finding treatment of the hypothyroidism. The study reveals the *hetus* of *kaphaavruttavata* which was not given in the ayurvedic texts. In previous study the hypothyroidism and *kaphaavruttavata* is matched symptomatically. On the basis of the pilot study, an attempt is made to find out the *hetus* of hypothyroidism. So that it will be the additional data for *hetus* of *anuktavyadhi* like hypothyroidism.

Keywords: *hetu, kaphavruttavata, anuktavyadhi*, hypothyroidism.

Introduction-

In today's era the lifestyle diseases part a major role in development of disease. Sedentary lifestyle making people more vulnerable to metabolic diseases, one of them is hypothyroidism[1].Millions of people currently suffering from hypothyroidism and even don't know it. Thyroid regulates metabolism of body. Failure of thyroid hormone to meet the metabolic need of the body results in hypothyroidism. Thinking on the demands we make on our metabolism,

We are seeing more and more hypothyroidism in women in their 20s, 30s, and 40s. Female gender and old age were found to have significant association with hypothyroidism[2].42 million people in India have thyroid disorders and hypothyroidism is the most common thyroid disorder in India, affecting 1 in 10 adults[3].Women are 6 times more prone than men[4]. The prevalence of hypothyroidism in India is 11% compared with 2% in UK and 4.6% in USA[5].Symptoms given under *kaphaavruttavata* in the classic text of *ayurveda*, are similar with that of hypothyroidism[6].If the causative factors are known their avoidance can help to avoid the disease and to control the growth of the disease. Thus knowledge of *hetu* is having prophylactic (preventive) as well as curative perspective. In Ayurveda it is explained that *nidanparivarjan* (avoidance of causative factors) is the best treatment to be disease free. There are many studies related to *lakshan* as of hypothyroidism in *ayurvedic* view. *Ayurvedic hetus* of hypothyroidism are not studied yet, so there is a need to search the *hetus* of hypothyroidism. So that we can prevent the occurrence of hypothyroidism and study of *hetu* will help us to treat the hypothyroidism. Hence by avoiding all the causative factors which resembles for manifestation of disease can treat the disease in its own way.

Objectives-

a. Primary Objective-To estimate association between causes of *kaphaavruttavata* and hypothyroidism.
b. Secondary Objective-To evaluate severity of hypothyroidism on the basis of gradation of *kaphaavruttavata* cause.

Material and method-

This pilot study was conducted in Shri *Ayurved Mahavidyalaya*, Nagpur. The study conducted on known case of hypothyroid patients and healthy individual with normal TSH, in a period of 12 months after taking institutional ethical clearance and informed consent of the patients. The formula used to calculate the size of the required sample wcras n = (z)2 p(1-p)/d2, where n = sample size, 95% level of confidence used, P = expected prevalence of proportion, and previous studies were taken into consideration.

Inclusion criteria-

1) Patients of age groups 20 to 50 yrs.
2) Known case of hypothyroidism since 2 years.
3) Irrespective of their gender, religion, occupation, socioeconomic condition.
   - For cases - Patient with known case of hypothyroidism.
   - For control- Healthy individual with normal TSH.

Exclusion criteria-

1) Patients with cardiac problem like hypertension, cardiomegaly, IHD.
2) Patients suffering from other pituitary and hypothalamic disorders.
3) Patients suffering from thyrotoxicosis.
4) Pregnant patient of hypothyroidism.
5) Metabolic syndrome.

Withdrawal criteria-

1) The one who firstly agreed for study but further declined to give any information.
2) Who are not willing to communicate or giving any information.

Assessment criteria-

The *hetus* of *kaphavruddhi* are taken for the assessment of causes of hypothyroidism.

Hetus of *kapha vruddhi*[7]–

- *Divaswap*
- *Avyayam*
- *Alasya*
- *Madhuramlalavanrassevan*
- *Sheet, snighdha, guru, picchil*
-
- *Abhishyandi*
- *Pishtavikruti*
- *Dadhi*
- *audakmamsa*
- *Samashan*
- *Adhyashan*

The 10 questions are prepared on the basis of these *hetus*. The yes-no type of questions are prepared.

Methods-

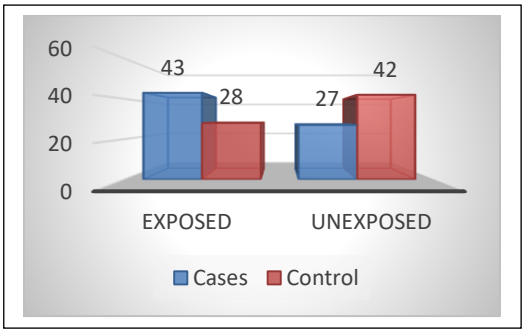
Approval from the Institutional Ethical Committee of Shri *Ayurved Mahavidyalaya*, Nagpur was obtained before conduction of study. Patients taken from OPD and IPD of college hospital. Participants were recruited by Convenient sampling technique. Informed consent was obtained from the participants. The subject taken for the study is divided into case and control group the questionnaire asked to both the groups. Known cases of hypothyroidism were taken as a cases. Healthy individual with normal TSH is considered as a control. Questionnaire asked by interview method. Cases Exposed to *hetu* and not exposed to *hetu* and control exposed to *hetu* and not exposed to *hetu* are compared. Odd's ratio was calculated, statistics was applied. Conclusion derived.

Result-

140 patients were taken into the study. Among them 70 were cases (known case of hypothyroidism) and 70 were control (healthy individual with normal TSH). The odd's ratios of the 10 *hetus* are as follows.

Table No.1 Association of *Diwaswap* and presence of hypothyroidism:

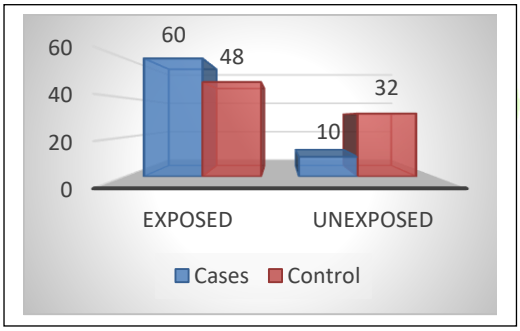
Diwaswap	Cases		Control		p-value
	N	%	N	%	
Exposed	43	61.43	28	40	OR=2.38 95% C.I. (1.14-4.98) Chi2=6.43 P=0.0112, Significant
Unexposed	27	38.57	42	60	



Out of 70 cases 43(i. e 60.56%) are exposed to *diwaswaphetu* and out of 70 control 28 are exposed to *diwaswaphetu*. This shows significant difference as p value is less than 0.05 (P=0.0112). Odds ratio for exposed and unexposed to *diwaswap* is 2.38. As odds ratio is greater than 1, this shows association.

Table No.2 Association of *Avyayam* and presence ofhypothyroidism:

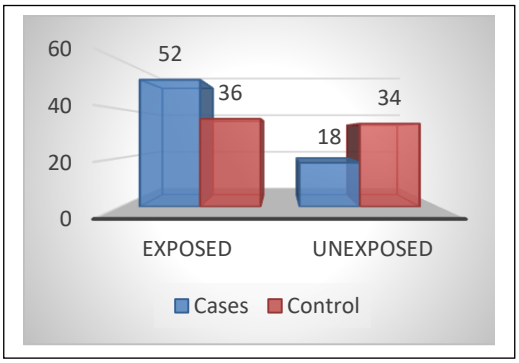
Avyayam	Cases		Control		p-value
	N	%	N	%	
Exposed	60	85.71	48	68.57	OR=2.75 95% C.I. (1.18 – 6.36) Chi2=5.8333 P=0.0157, Significant
Unexposed	10	14.29	22	31.43	



The exposure of *avyayam* is 85.71% (i.e. 60) in case group and 68.57(i.e. 48) in control group. The p-value calculated is 0.0157, this shows significance.

Table No.3 Association of *Aalsya* and presence of hypothyroidism:

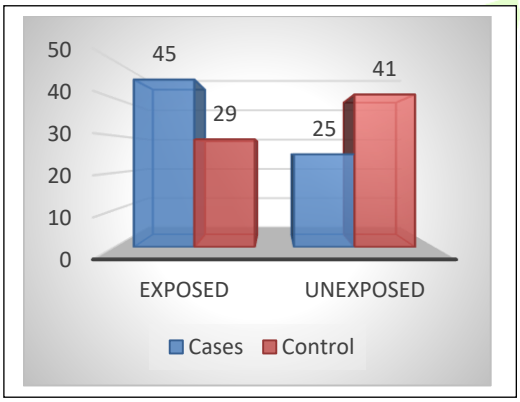
Aalsya	Cases		Control		p-value
	N	%	N	%	
Exposed	52	74.29	36	51.43	OR=2.72 95% C.I. (1.26-5.94) Chi2=7.83 P=0.0051, Highly Significant
Unexposed	18	25.71	34	48.57	



The cases exposed to *Aalasyahetu* are 74.29(i.e.52) and control exposedto *alasyahetu* are 51.43(36). The p- value calculated is 0.0051, this shows highly significance.

Table No.4 Association of *Abhishyandibhojan* and presence of hypothyroidism:

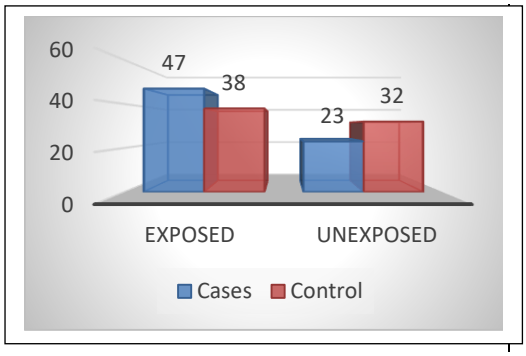
Abhishyandi Bhojan	Cases		Control		p-value
	N	%	N	%	
Exposed	45	64.29	29	41.43	OR=2.54 95% C.I .(1.286-5.034) Chi2=7.338 P=0.0068, Highly Significant
Unexposed	25	35.71	41	58.57	



The cases exposed to *abhishyandiaharsevan* are 64.29 (i.e.45) and control exposed to *alasyahetu* are 41.43% (i.e.29). The p- value calculated is 0.0068, this shows highly significance.

Table No.5 Association of *Samashan* and presence of hypothyroidism.

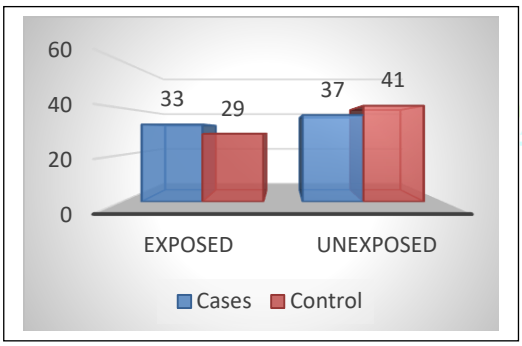
Samshan	Cases		Control		p-value
	N	%	N	%	
Exposed	47	67.14	38	54.29	OR=1.72 95% C.I. (0.82 – 3.62) Chi2=2.4257 P=0.1194, Not Significant
Unexposed	23	32.86	32	45.71	



The cases exposed to *samashan* are 67.14 % (i.e.47) and control exposed to *alasyahetu* are 54.29 % (38). The p-value calculated is 0.1194. Significance is not seen for *samashan*.

Table No. 6 Association of *Adhyashan* and presence of hypothyroidism:

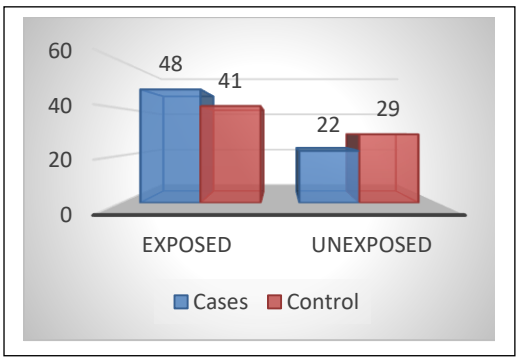
Adhyashan	Cases		Control		p-value
	N	%	N	%	
Exposed	33	47.14	29	41.43	OR=1.26 95% C.I.(0.61 – 2.59) Chi2=0.4632 P=0.4961, Not Significant
Unexposed	37	52.86	41	58.57	



The cases exposed to *adhyashan* are 47.14% (i.e.33) and control exposedto *alasyahetu* are 41.43% (29). The p- value calculated is 0.4961. Significance is not seen for *adhyashan*.

Table No.7 Association of *Madhur-amla-lavan*ras*sevan* and presence of hypothyroidism:

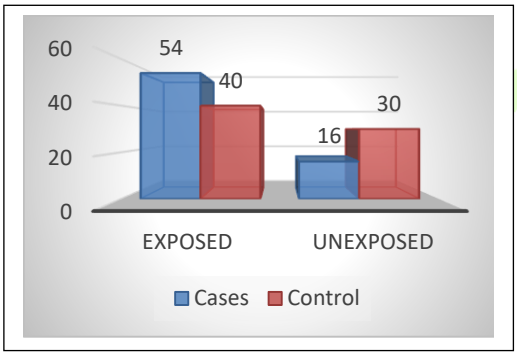
Madhur-amla-lavan	Cases		Control		p-value
	N	%	N	%	
Exposed	48	68.57	41	58.57	OR=1.54 95% C.I. (0.73 – 3.28) Chi2=1.5513 P=0.2189, Not Significant
Unexposed	22	31.43	29	41.43	



The exposure of cases for *Madhur-amla-lavan*ras*sevan* is 68.57% (48) and for control is 58.57% (41). The p- value calculated is 0.2189 which is less than 0.05 so significance is not seen for *Madhur-amla-lavan*ras*sevan*.

Table No.8 Association of *Pistavikruti seven* and presence of hypothyroidism:

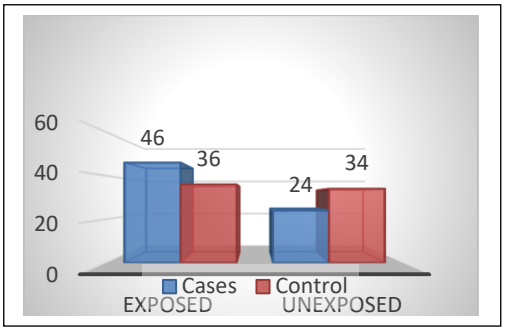
Pistavikruti Seven	Cases		Control		p-value
	N	%	N	%	
Exposed	54	77.14	40	57.14	OR=2.53 95% C.I.(1.15-5.65) Chi2=6.35 P=0.0118, Significant
Unexposed	16	22.86	30	42.86	



The cases exposed to *Pistavikrutisevan* are 77.14 % (i.e.54) and control exposed to *hetu* are 57.14% (40). The p- value calculated is P=0.0118. Significance is seen for Pistavikruti*sevanhetu*.

Table No.9 Association of *Dadhiseven* and presence of hypothyroidism:

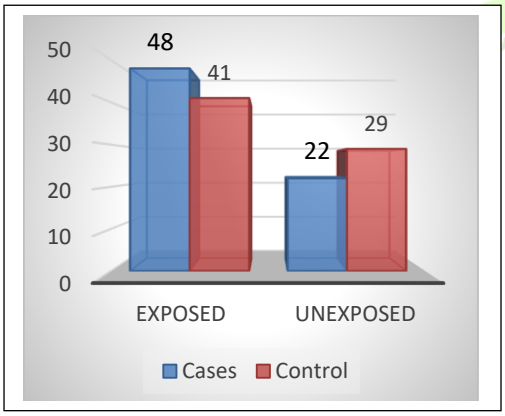
Dadhiseven	Cases		Control		p-value
	N	%	N	%	
Exposed	46	65.71	36	51.43	OR=1.81 95% C.I.(0.86 – 3.78) Chi2=2.9437 P=0.0862, Not Significant
Unexposed	24	34.29	34	48.57	



The cases exposed to *Dadhiseven* are 65.71% (i.e.46) and control exposed to *hetu* are 51.43% (36). The p- value calculated is P=0.0862. Significance is not seen for *Dadhisevenhetu*.

Table No.10 Association of *Audakmansa* seven and presence of hypothyroidism:

Audakmansa	Cases		Control		p-value
	N	%	N	%	
Exposed	48	68.57	41	58.57	OR=1.54 95% C.I. (0.73 – 3.28) Chi2=1.51 P=0.2189, Not Significant
Unexposed	22	31.43	29	41.43	



The cases exposed to *Audakmansa* are 68.57% (i.e.48) and control exposed to *hetu* are 58.57% (41). The p- value calculated is P=0.2189. Significance is not seen for *Dadhisevenhetu*.

Conclusion-

Among 10 *hetus*5*hetus* which are *divaswap, avyayam, alasya, abhishyandiahar, pisthavikrutisevan*shows the association between *kaphavruttavata* and hypothyroidism.

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