

CLINICAL CO-REACTION OF YAKRUT AND RAKTADHARA KALA

¹Jagtap Manoj

²Jagtap Jyoti

¹Jagtap Manoj M. MD (AYU), Asso.Professor, Dept.of Rachana Sharir, YMTAMC, Kharghar,Mubai,India.

²Jagtap Jyoti M. MD (AYU), Assi. Professor, Dept.of Swastha writta, YMTAMC, Kharghar,Mubai,India.

ABSTRACT

Seven kala are present in human body which mainly separate dhatu and ashaya. Raktadhara kala is second in position and present at yakruta, pleeha and sira. Yakruta is also mulasthana of Raktavaha srotas. Yakruta is formed by Rakta dhatu. Aiming to prove relation between yakruta and raktadhara kala 60 patients of known liver diseases were selected. All these patients were screened for BT/CT/PT/INR values. Raktadhara kala mainly controls bleeding time/clotting time. In liver diseases altered values of BT/CT/PT/INR were found Maximum patients showed abnormal values of BT/CT/PT/INR. This proved positive relation between liver diseases and coagulopathy.

Key words: Yakruta, Raktadhara kala, Coagulopathy.

INTRODUCTION: Seven kala are present in human body which mainly separate dhatu and ashaya¹. The second kala is raktadhara kala², present beneath the muscle, within which shonita is present, especially in siras, yakruta and pleeha. Yakruta is also mulasthana of Raktavaha srotas³ Yakruta is formed by Rakta dhatu⁴ Just as milky sap flows out when trees with milky sap out or their bark bruised, similarly when muscles are cut, blood flows out quickly⁵. Liver is one of the sites of raktadhara kala. Due to modern lifestyle, preservatives, pesticides, alcohol, etc. liver easily gets damaged. In many diseases of liver, bleeding time, clotting time gets altered. We are correlating functions of raktadhara kala with BT, CT, PT, PTT, aPTT values. Hence, in the cases of liver diseases abnormal values of BT, CT, PT, PTT, and aPTT will prove dis functioning of Raktadhara kala. According to the latest WHO data, Liver disease deaths in India reached 208,185 or 2.31% of total deaths. The age adjusted death rate is 23.59 per 100,000 of population ranks



India #27 in the world. Raktadhara kala is situated in Liver. In liver diseases normal function of liver is altered which will impact on Raktadhara Kala. If Raktadhara Kala gets vitiated then Bleeding time or Clotting time or Prothrombin time or Partial thromboplastin time or Activated thromboplastin time will vary from their normal values. In ayurveda the word yakruta is used for liver. This word is derived from 'yaha' i.e. one and 'krut' which literally means 'does'. Thus the word yakruta means an organ which is always active and performs important metabolic functions of the body. Liver is like chemical processing plant. It receives 30% of the blood circulating in your system every minute – performing chemical reactions to remove harmful toxins and distribute and store essential nutrients. This vital process is called 'metabolism' and cells in the liver, known as hepatocytes, are put to work to keep body working at its best.

MATERIALS AND METHODS: A group of 60 patients of prediagnosed liver

diseases were taken for study. Bleeding time, clotting time, prothrombin time, partial thromboplastin time, activated partial thromboplastin time of these patients were observed.

According to BT/CT/PT/PTT/aPTT values conclusion were drawn.

Investigation and Examination:

1. LFT
2. BT / CT / (PT/PTT/aPTT if required)
3. USG Abdomen if required.

INCLUSION CRITERIA:

1. Age group 18yrs to 70 yrs.
2. 60 patients of Liver diseases.
3. Both sexes i.e. Male & female were included.

EXCLUSION CRITERIA:

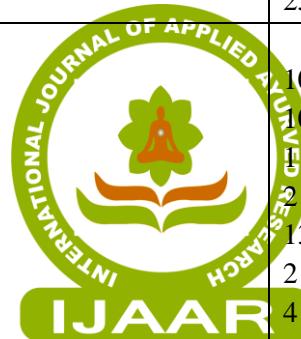
1. Age group <18 yrs and > 70 yrs were excluded.

WITHDRAWAL CRITERIA:

If Subject refuses for study.

OBSERVATION AND RESULTS:

Category	No. of subjects	%
Age in yrs.		
18-36	31	51.66
Up to 54	25	41.66
Up to 70	4	6.66
Gender		
Male	35	58.33
Female	25	41.66
Diagnosis		
NAFLD	10	16.66
AFLD	10	16.66
HAV	2	1.66
Chronic liver failure	13	3.33
Liver cirrhosis	2	21.66
Fulminant hepatitis	4	3.33
Acute liver failure	7	6.66
Jaundice	2	11.66
Hepatitis B	3	3.33
Hepatitis E	2	5.00
Hepatitis A	2	3.33
Hepatitis C	2	3.33
HCC	2	3.33
Alcoholic Addiction		
Alcoholic	32	53.33
Non Alcoholic	28	46.66
Bleeding Time		
Altered	26	43.33
Within Normal limit	34	56.66
Clotting Time		
Altered	26	43.33
Within Normal limit	34	56.66
PT/INR		
Altered	43	71.66
Within Normal limit	17	28.33



STATISTICAL ANALYSIS:

Study of Bleeding time, clotting time, Prothrombin time, Partial Thromboplastin time, Activated Partial thromboplastin time are studied of the patients of prediagnosed liver diseases.

Null hypothesis: the said parameters under study remains unaltered or within normal limit in the patients of prediagnosed liver diseases.

BLEEDING TIME:

By applying Chi Square test for goodness of fit, it is observed that, calculated chi square value 1.0667 which is much less than the table value 3.842 at degree of freedom 1. So it is concluded that, null hypothesis is accepted as $p > 0.05$.

In other words, the Bleeding Time under study remains unaltered or within normal limit in the patients of prediagnosed liver diseases.

CLOTTING TIME: By applying Chi Square test for goodness of fit, it is observed that, calculated chi square value 1.0667 which is much less than the table value 3.842 at degree of freedom 1. So it is concluded that, null hypothesis is accepted as $p > 0.05$.

In other words, the Clotting Time under study remains unaltered or within normal limit in the patients of prediagnosed liver diseases.

PT/INR

By applying Chi Square test for goodness of fit, it is observed that, calculated chi square value 11.267 which is much more than the table value 3.842 at degree of freedom 1. So it is concluded that, null hypothesis is rejected as $p < 0.05$.

In other words, the PT/INR under study altered or moved away from normal limit in the patients of prediagnosed liver diseases.

DISCUSSION: Yaktuta is said to be site of raktadhara kala. Kala is membrane like structure present between dhatu and ashaya. There are total seven kala present in human body. All these kala are:

Mansadhara kala

Raktadhara kala

Medodhara kala

Shleshmadhara kala

Purishdhara kala

Pittadhara kala

Shukradhara kala

This sequence is according to position of kala from outside to inside. Raktadhara kala is second in number and situated below mansa. It is said to be present mainly at yaktuta, pleeha and all sira. Yaktuta is also site of raktavaha srotas. Yaktuta is formed by raktadhatu at the time of fetal development. Raktadhara kala mainly holds/ does dharan of raktadhatu. At the incidence of any injury bleeding is seen normally which later stops naturally. This process is called coagulation. This coagulation depends on various factors called as coagulation factors. Most of the coagulation factors are related to liver. Hence any liver disease may hamper this coagulation process. According to Ayurveda, Yaktuta vikar will land up into raktadhatu dushti and raktadhara kala dushti.

This proves relation between Yaktuta and raktadhara kala. The prediagnosed 60 patients of liver diseases were taken for study with their informed consent. All these patients were analyzed on the basis of BT/CT/PT/INR values.

CONCLUSION:

Patients in young age group were found in maximum. Though male patients are more, we cannot conclude about role of gender in liver diseases. Patients in working category were maximum. Patients having mix diet

were maximum since now days people are taking mix diet. So in my data mix diet patients found more in number. Alcohol is main and proven cause for alcoholic fatty liver disease and liver cirrhosis etc. Maximum patients showed abnormal values of PT/INR. Since BT/CT values are manually recorded these show less variation. This proves positive relation between liver diseases and coagulopathy. Hence the relation between Yaktuta and Raktadhara kala is proved.

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Corresponding Author: Vd. Manoj M Jagtap MD (ayu)
Assi. Professor, Dept. of Rachana Sharir YMT Ayurvedic Medical College, Kharghar.Navi Mumbai Maharashtra 410210
Email id:vdmanojjagtap@gmail.com

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