

Jarana of Gandhak in Parad and Functional Analysis of Jeerna

**Presented by
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Padmashri Awardee, 1999**

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Gandhak Jarana

“वसुविधविधिसंस्कृतोऽपि सूतो रसविबुधैरिह हिङ्गुलोत्थितो वा ।
रसगुणबलिजारणाविहीनो गदगणवारणतां तु नैति नूनम् ॥”

- Ras Tarangini (Ch 5, Shlok 101)

पारद चाहे अष्टसंस्कारित हो अथवा हिङ्गुल से प्राप्त शुद्ध रूप का, परन्तु यदि वह छः गुणा गंधक द्वारा जीर्ण न किया गया हो तो उसमें रोगनाशक शक्ति पूर्ण रूप से नहीं आती। **अतः पारद में रोगनाशक शक्ति तथा रसायन गुण उत्पन्न करने के लिए गंधक जारण अवश्य करना चाहिए।**

Properties of *Shadguna Balijeerna Parad*

"समे तु गन्धके जीर्णे सामान्यगद्नाशनः ।
द्विगुणे तु विशेषेण महारोगविधूननः ॥
त्रिगुणे तु विशेषेणाक्षय्यपुंस्त्वप्रकाशनः ।
चतुर्गुणै महोत्साहमेधास्मृतिविवर्धनः ॥
तथा पञ्चगुणेऽशेषगदसन्तापनाशनः ।
रसेश्वरः षड्गुणे तु विविधाद्भुतकार्यकृत् ॥”

- *Ras Tarangini (Ch 5, Shlok 106-108)*

Present Scenario

- **Knowledge from the classical texts**
- **Use of *kachchap yantra***
- **More described, less practiced**
- **Concept of *Gandhak Jarana* described in *Rasayan Saar* by *Rasacharya Shyam Sunder Vaishya***

Background

- Concept of *Gandhak Jarana* was brought in practice by Meerut based Late Vaidya Chandra Prakash ji
- Use of *Nalika Damru Yantra*
- AMAR; an example of *rasaushadhi* prepared using *Gandhak Jarana*, prepared using purified Mercury, Copper and Sulphur



Mercury (*Parad*)



Copper (*Tamra*)



Sulphur (*Gandhak*)



Devdali, Lemon, *Aprajita*

Processing of Mercury

Hinguloth Parad → *Tamrotha Parad* → *Vishoth*



Processing of Copper



Processing of Sulphur



Grinding (*Mardan*)

- *Nirpaav drav* (liquid) prepared using *Luffa echinata* (*devdali*), *Clitoria ternatea* (*Aparajita*) and lemon juice
- Mixture of purified Mercury, purified Copper and purified Sulphur ground by adding the liquid



- The mixture is then dried under the sun

Sandhi Bandhan in Nalika Damru Yantra

- **Dried mixture sealed in *nalika damru yantra***



Heating (*Jarana*)

- *Nalika damru yantra* subjected to heating using traditional *chulha*



Opening after Cooling

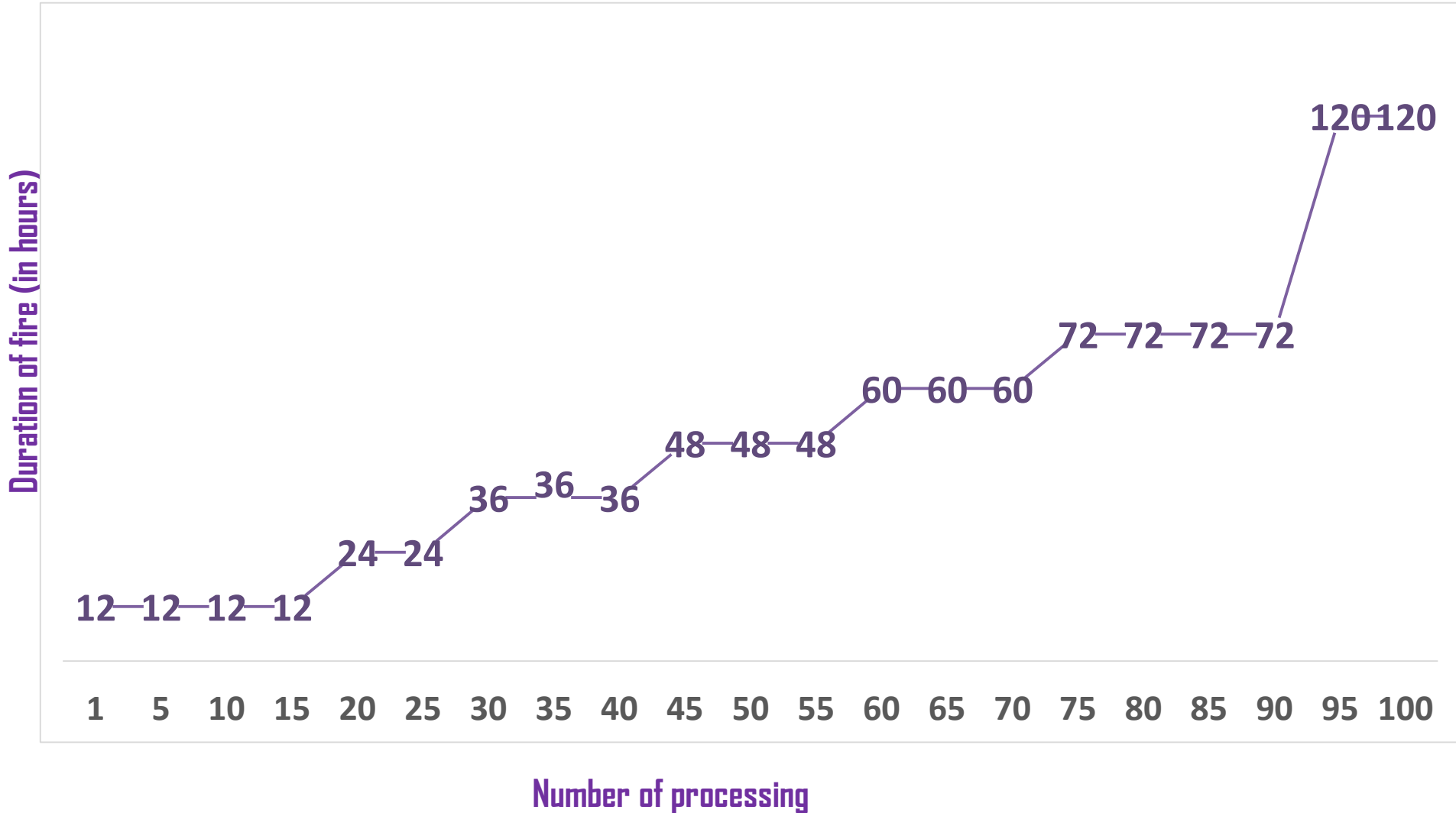
- Opening of *nalika damru yantra* after cooling



- Grinding again after adding purified Sulphur and liquid
- Cycle of grinding and heating (*gandhak jarana*) repeated hundred times

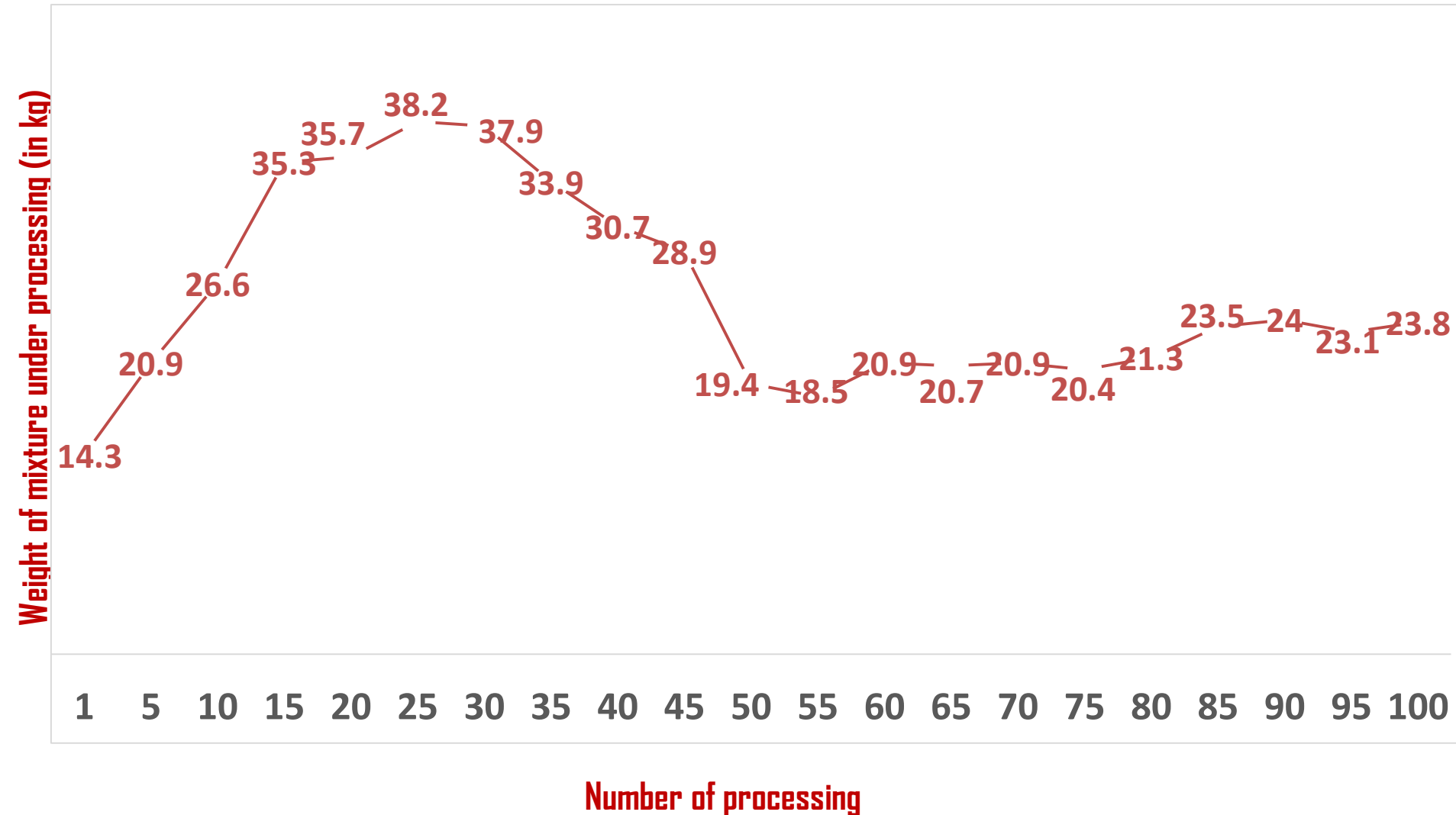
Hours of Heating during Processing

- Exposure to heat is increased after the weight of mixture increases



Weight of Mixture during Processing

- Exposure to heat is increased after the weight of mixture increases



Quality Control

Ensuring optimum of heating and grinding

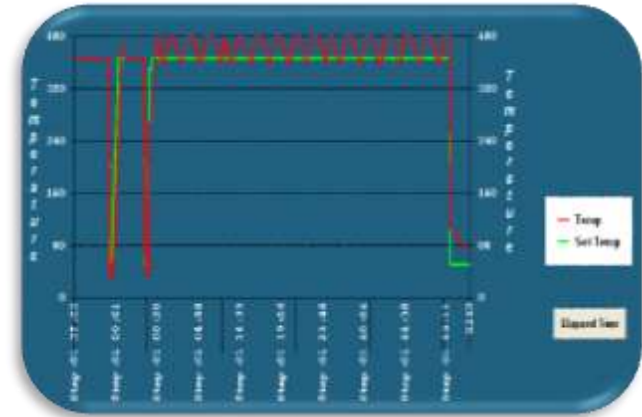


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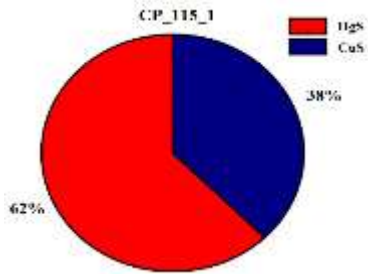
Material: 2 gms/100 g
Specification: CP-255/43 S
Grinding: 5
Description: FRACILE SIZE ANALYSER

Size (µm)	Count	Weight (%)
1	0.00	0.00
2	0.00	0.00
3	0.00	0.00
4	0.00	0.00
5	0.00	0.00
6	0.00	0.00
7	0.00	0.00
8	0.00	0.00
9	0.00	0.00
10	0.00	0.00

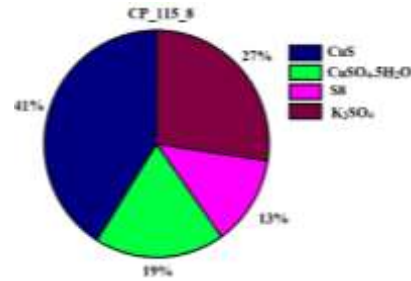
Special Count: 0.00
Total: 13662.18
Mean: 6.72
Std Dev: 0.82
Max Error: 0.02
Max: 3.67
Min: 4.48
D-m Range: 3.29
Median: 4.50
Mode: 6.50
Skewness: 2.99
Kurtosis: 7.44
Volume: 2321.08
No. Acc: 944751.11
Count: 433.25



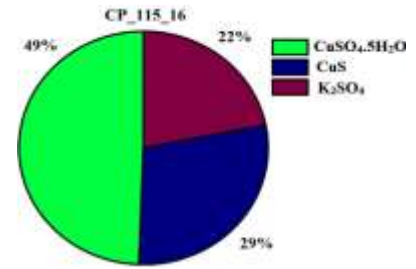
End Product – Devoid of Free Metals



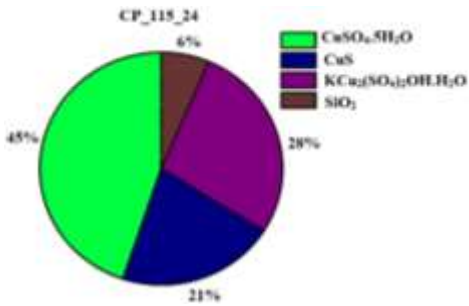
After 1st GJ



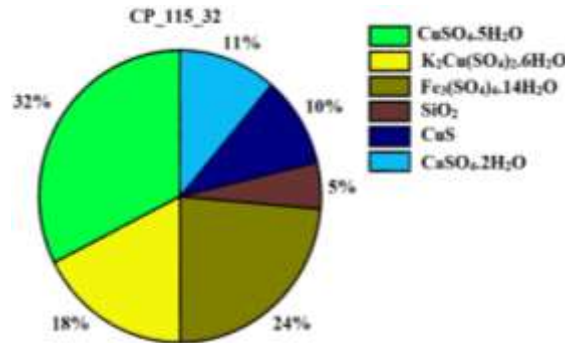
After 8th GJ



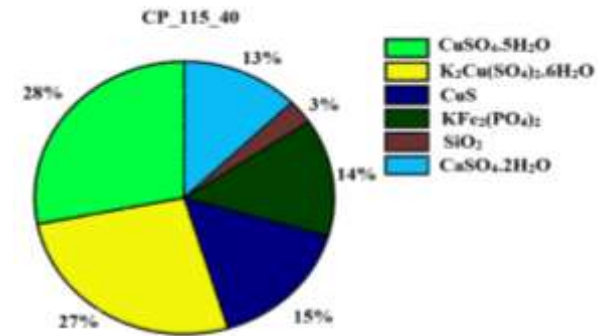
After 32nd GJ



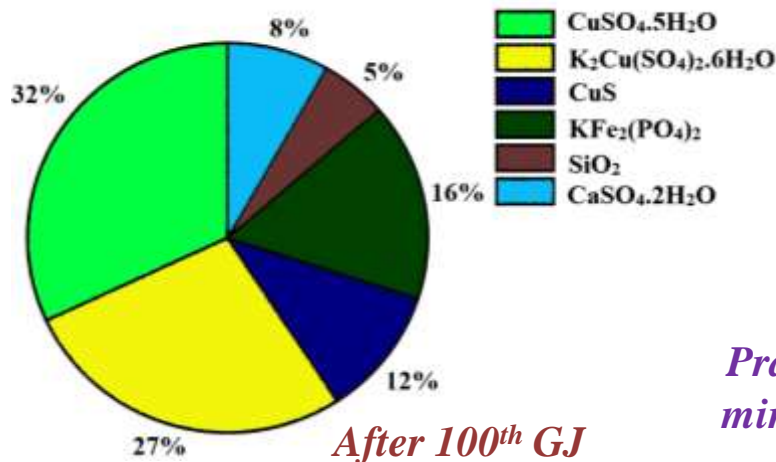
After 48th GJ
CP_115_50



After 64th GJ



After 80th GJ



After 100th GJ

Source: Department of Inorganic & Physical Chemistry, IISc, Bangalore

Indian Patent No. 529197

Prakash VB et al. Transformation of Copper into therapeutic mineral complex following principles of Rasa Shastra. *Annals Ayurvedic Med.* 2020;9(3).

Safety Studies

Particulars	Acute Study			Sub-acute Study				Chronic Study					
Species used	Sprague Dawley Rats			Sprague Dawley Rats				Sprague Dawley Rats					
Dose interval	Single dose			24 hours				24 hours					
Route of administration	Oral			Oral				Oral					
Duration of dosing	Single dose			28 days				180 days					
Duration of post-exposure follow-up	14 days			14 days (high dose group)				28 days					
Groups	I	II	III	I	II	III	IV	I	II	III	IV	V*	VI*
Number and sex of animals	3 ♀	3 ♀	3 ♀	6 ♀ +6 ♂	6 ♀ + 6 ♂	6 ♀ +6 ♂	6 ♀ +6 ♂	20 ♀ + 20 ♂	20 ♀ + 20 ♂	20 ♀ + 20 ♂	20 ♀ + 20 ♂	10 ♀ + 10 ♂	10 ♀ + 10 ♂
Unit dose (mg/kg)	2000	300	300	0	75	150	300	0	40	80	160	0	160
Results	Mortality in 30 minutes	No toxicity	No toxicity	No observed adverse effect level (NOAEL)– 300 mg/kg/ day				No observed adverse effect level (NOAEL)– 160 mg/kg/ day					

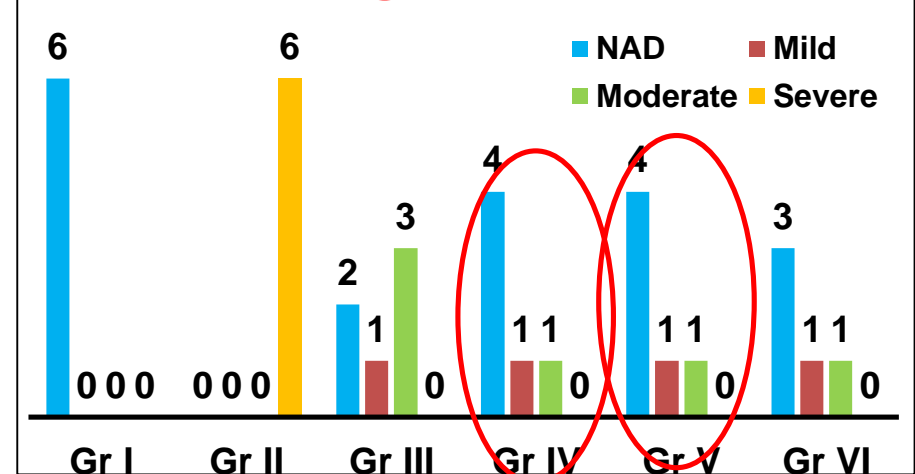
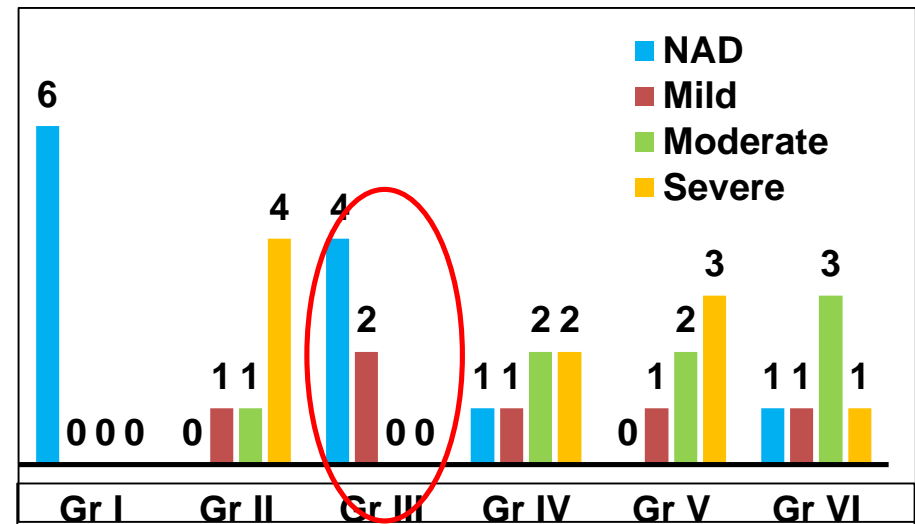
Data on file; Courtesy: Vipragen Biosciences Limited, Mysuru

Pancreatitis Protective Properties

(Experimental Study)

- Evaluation of protective activity of AMAR on L-Arginine induced chronic pancreatitis in male albino wistar rats

Gr	Treatment group	Doses
I	Untreated control	-
II	Disease control (L-Arginine)	2.0/ 2.0 g/kg
III	HMF + L-Arginine	25/ 13 mg/kg
IV	HMF + L-Arginine	50/ 19 mg/kg
V	HMF + L-Arginine	100/ 25 mg/kg
VI	6- α -methylprednisolone + L-Arginine	30/ 15 mg/kg

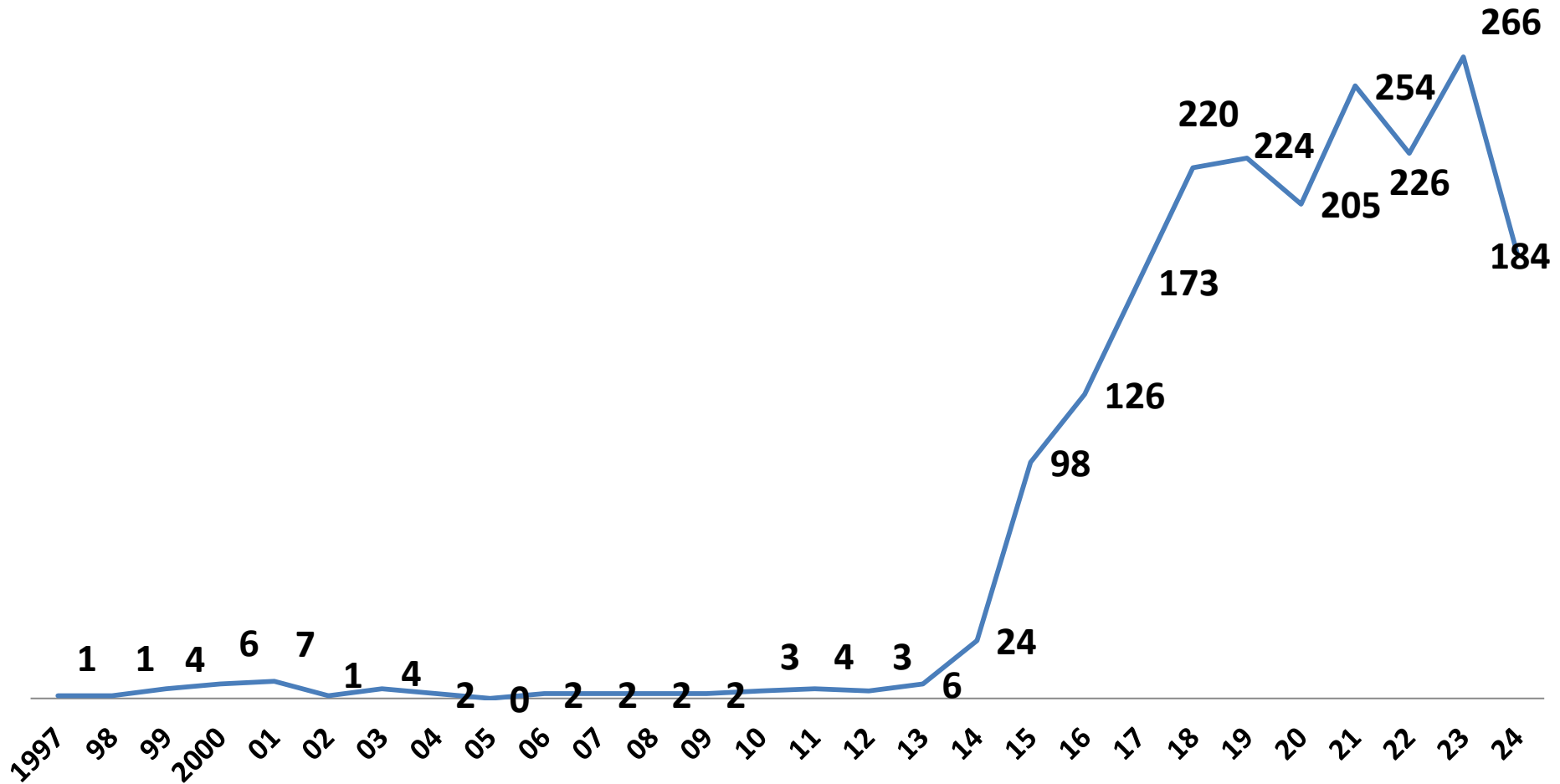


Prakash VB et al. Anti-Inflammatory Properties of a Processed Copper Complex in L-Arginine Induced Pancreatitis - Two Experimental Studies. EC Gastroenterology and Digestive System. 2019 (6.7):519-524.

Clinical Efficacy

(n = 2050)

Year wise **Enrolments** (January 1997 to October 2024)

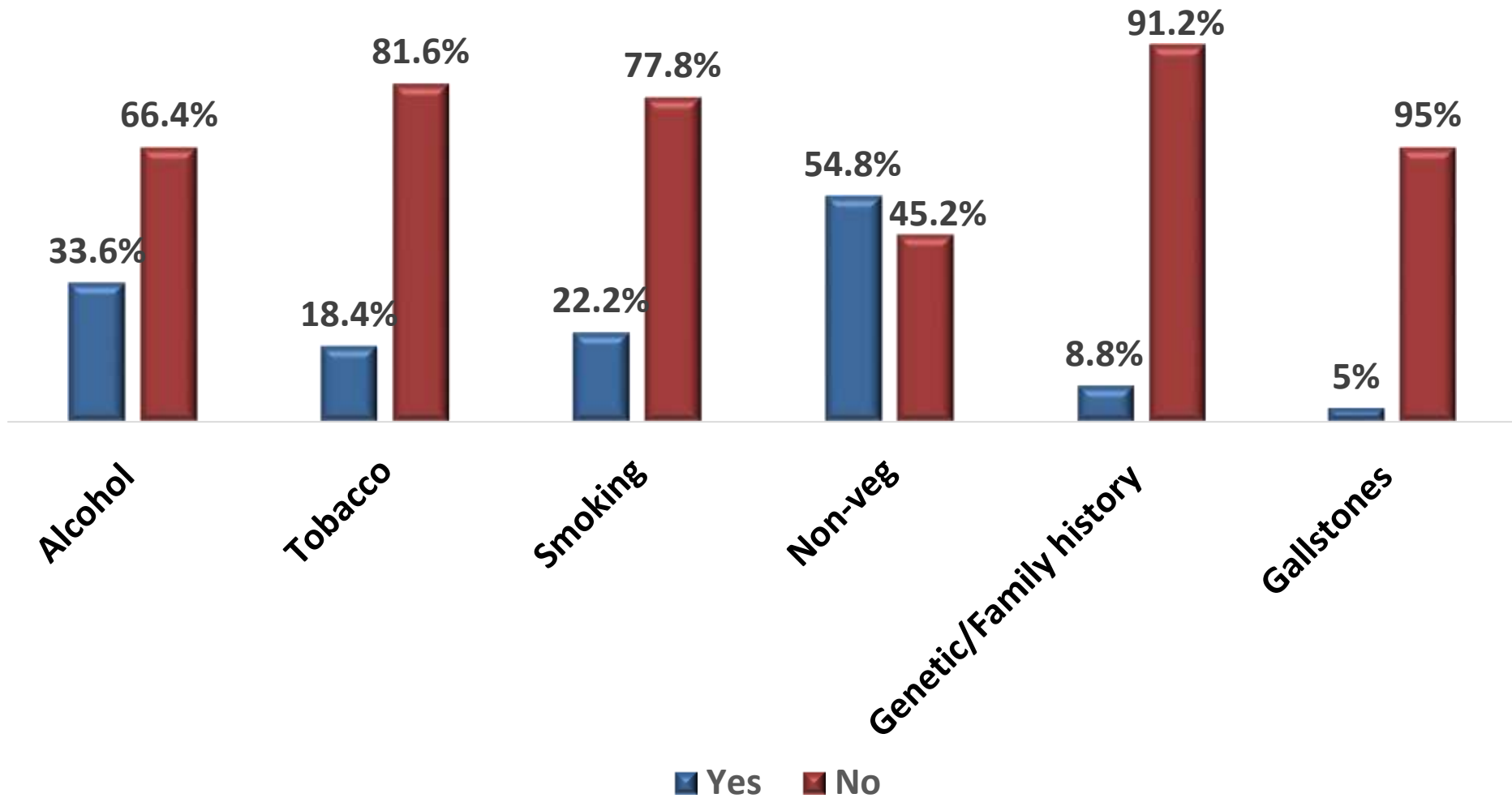


Source: Padaav - Speciality Ayurvedic Treatment Centre, Dehradun & Rudrapur

Geographical Distribution				(n = 2050)
State	No. of Patients	State	No. of Patients	
Uttar Pradesh	391	Andhra Pradesh	31	
Maharashtra	213	Tamil Nadu	31	
Gujarat	136	Odisha	29	
Delhi	132	Kerala	28	
Karnataka	127	Jharkhand	20	
Haryana	126	Jammu & Kashmir	19	
Uttarakhand	114	Himachal Pradesh	14	
Rajasthan	108	Tripura	5	
Madhya Pradesh	107	Goa	4	
West Bengal	69	Chandigarh	3	
Punjab	68	Pondicherry	2	
Telangana	65	Lakshadweep	1	
Chhattisgarh	61	Sikkim	1	
Bihar	53	Meghalaya	1	
Assam	44	Overseas	47	

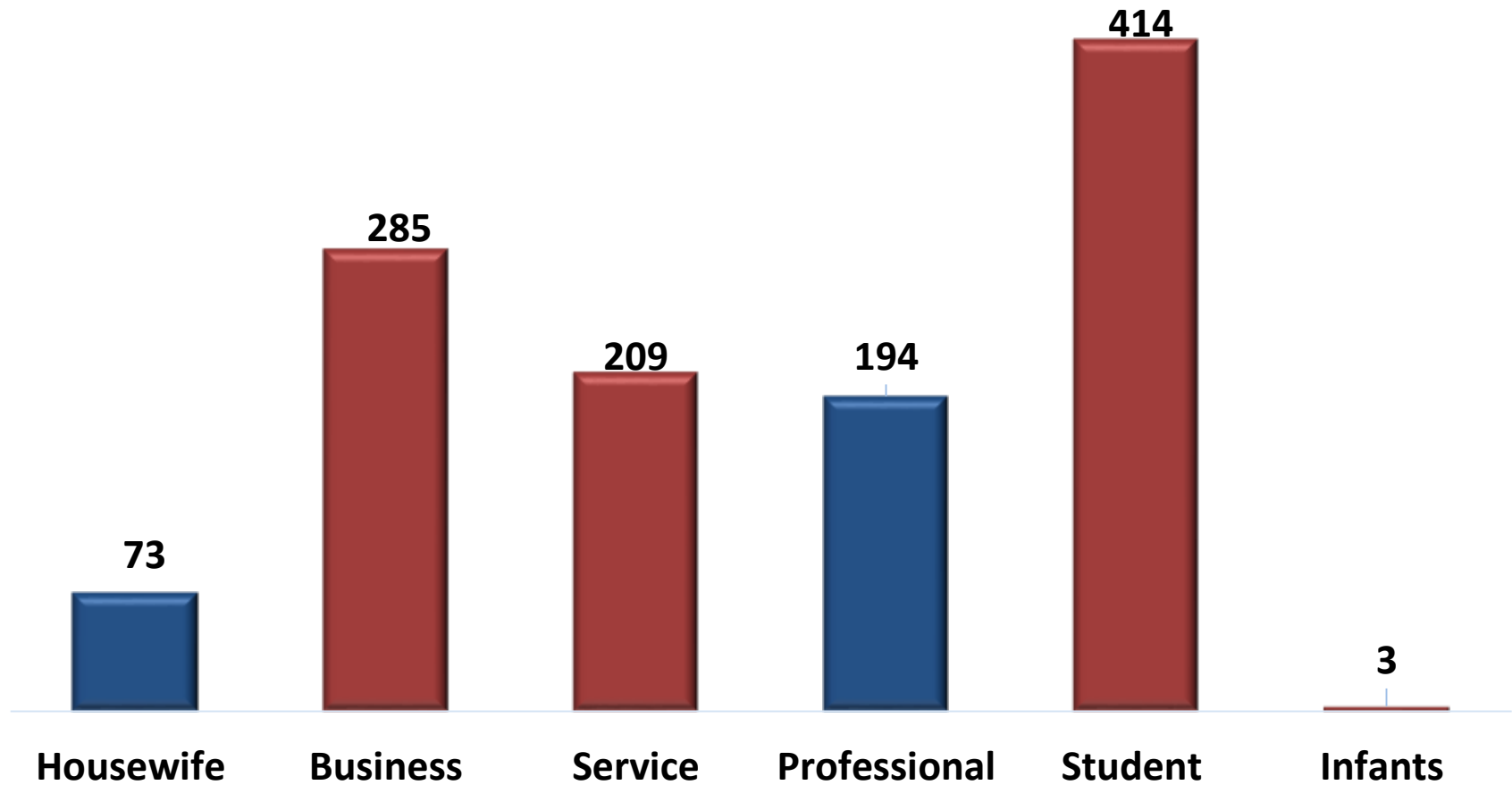
Dietary Pattern & Family History

(n = 2050)



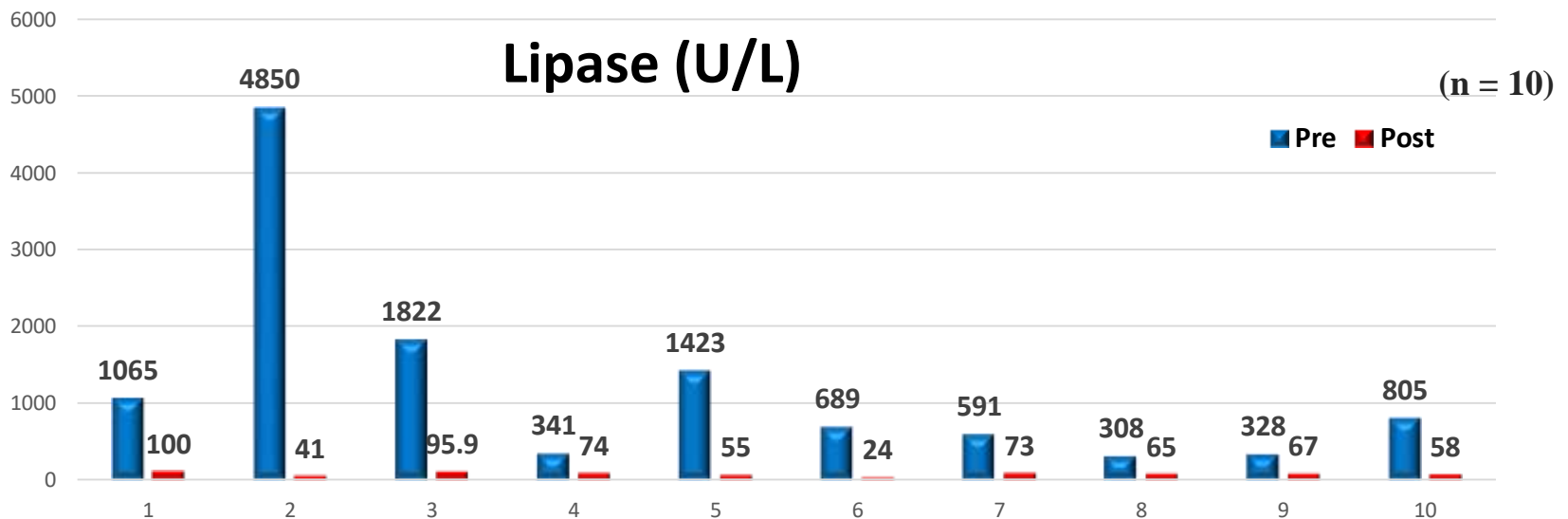
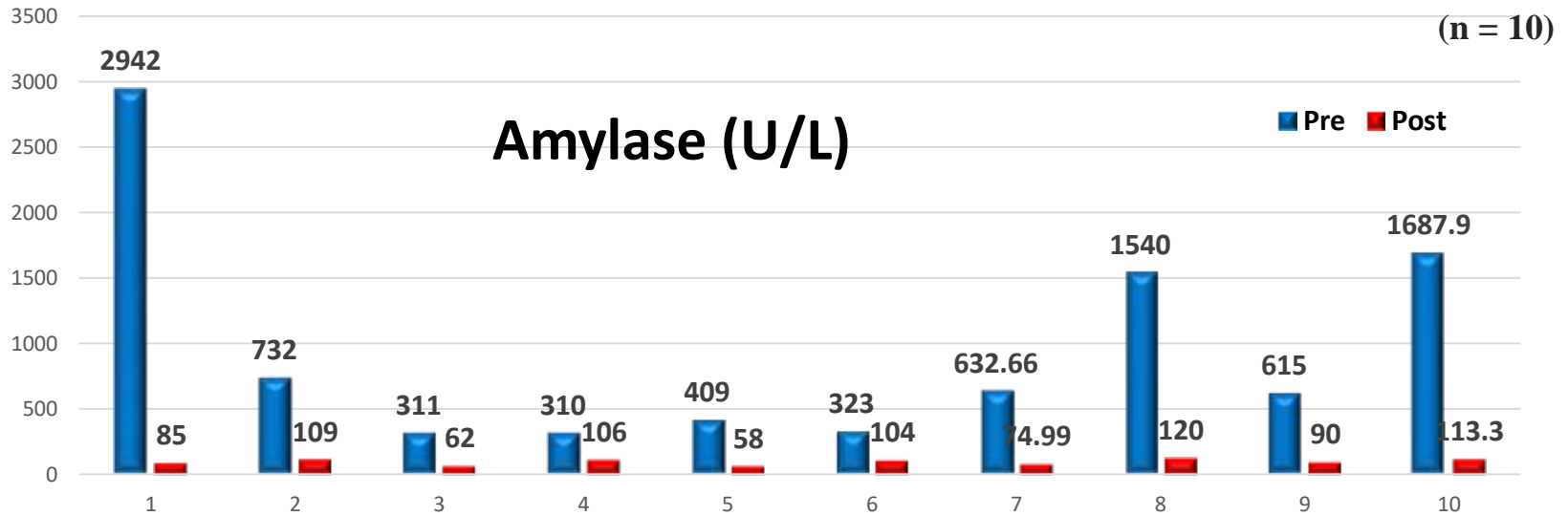
Profession-wise Distribution

(n = 1178/ 2050)



Effect in Acute Condition (Amylase Lipase Lowering Effect)

Effect evaluation after ten days of AYT



Impact of Ayurvedic Treatment

n= 1084/2050

Emergency attacks

3146



Pre

92.9%
reduction

222



Post

Emergency hospitalizations

1742



Pre

98.6%
reduction

24



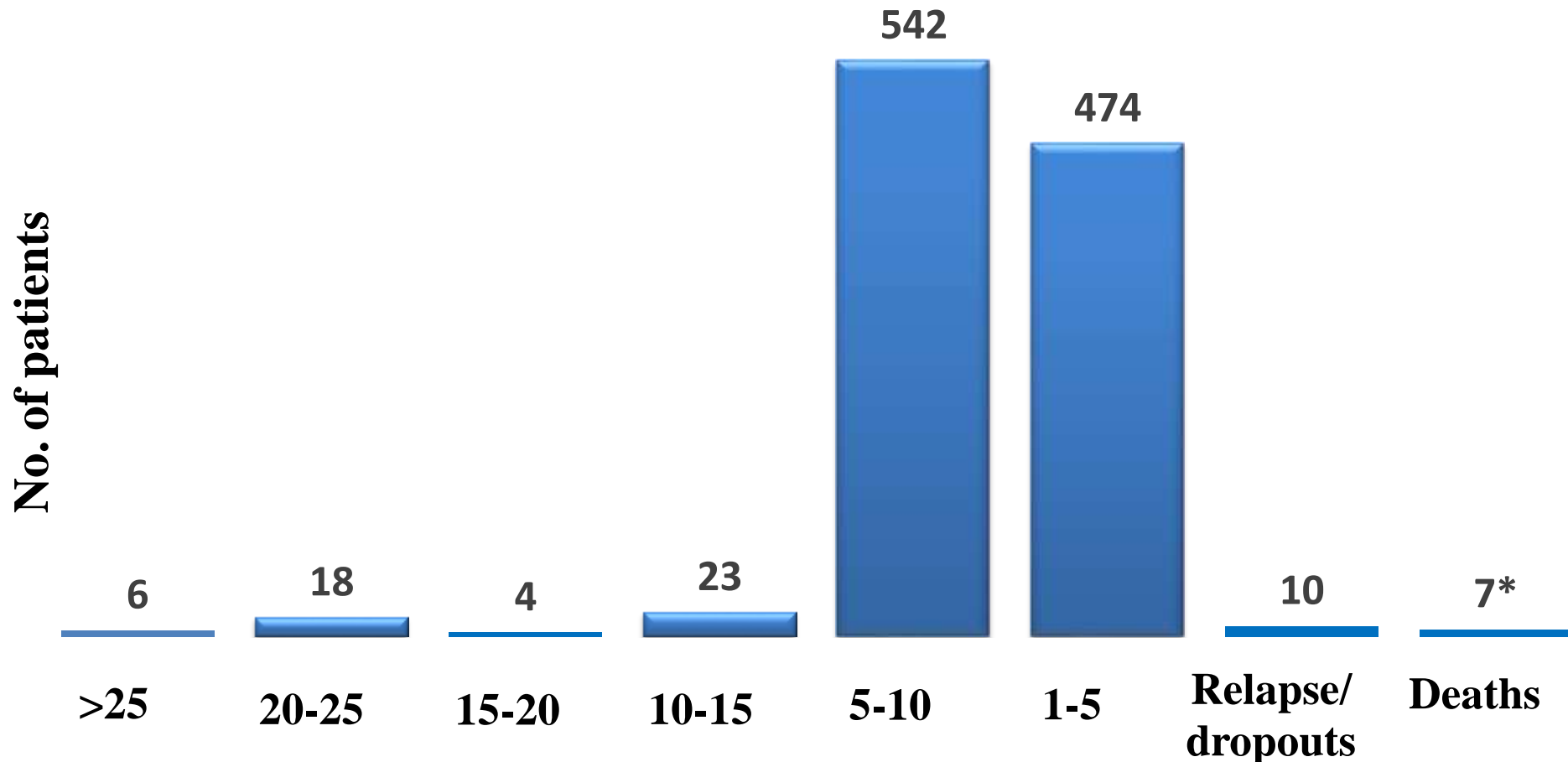
Post

Significant reduction: value>0.0001*

***Statistical analysis done using Wilcoxon signed rank test for paired observations, Mc Nemar's test and paired t-test**

Sustainable Effect

n= 1084/2050



#First patient completes 27 years long disease-free survival after getting nine recurring attacks in the year prior to AYT

*5 deaths post relapse, 1 due to hepatic failure and 1 due to cardiac arrest

Discussion

- *Gandhak jarana* and *jeerna* are well described but less practiced concepts of *Ras Shastra*
- AMAR is *dvigun gandhak jeerna parad*; effective in treating Pancreatitis (*maharog vidhunan*)
- This example shows the importance of the practice of *gandhak jarana* in preparing therapeutically effective formulations
- The idea of *shadgun jeerna parad* needs to be achieved
- *Gandhak jarana* and *jeerna* should be explored using modern scientific tools covering chemistry to pharmacology

Thank You!