

Scenario of Usefulness of Viscera Preservation

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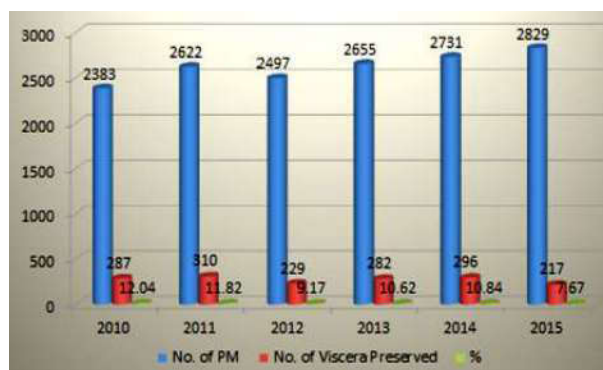
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Abstract

Preservation of viscera in all suspected cases of poisoning during medico-legal autopsy, its toxico-chemical analysis by Forensic Science Laboratory and its reliability as testimonial in adjudicating criminal cases in court of law for best interest of justice, has been the matter of debate and of scientific review. At one hand, no scientific evidence is considered as 100 % temper proof and on the hand; evidences should be beyond all reasonable doubts to convict any accused in the court of law. In the situation, when in many cases, either there is no eye witness of a crime or even if eye witnesses are there, chances of them becoming hostile for what so ever reason, court is left with no other option than to rely on scientific evidences and injury report, autopsy report and viscera examination report plays significant role in the administration of justice. 'SunandaPuskar' episode has added a new spice in the ongoing controversy. Present study titled "Scenario of Usefulness of Viscera Preservation" is sincere attempt to revel how much reliance should be paid on viscera examination report while adjudicating the criminal cases allegedly of poisoning.

Keywords: Poisoning; Viscera; FSL; Autopsy; Reliability; Court; Justice.



Order of Hon'ble Supreme Court (2014)

"We direct that in cases where poisoning is suspected, immediately after the post-mortem, the viscera should be sent to the FSL. The prosecuting

agencies should ensure that the viscera is, in fact, sent to the FSL for examination and the FSL should ensure that the viscera is examined immediately and report is sent to the investigating agencies/courts post haste. If the viscera report is not received, the concerned court must ask for explanation and must summon the concerned officer of the FSL to give an explanation as to why the viscera report is not forwarded to the investigating agency/court. The criminal court must ensure that it is brought on record," the Supreme Court has held."

How Long Viscera be Preserved?

The Calcutta high court recently appointed an amicus curiae or 'friend of the court' to assist it in getting answers to these questions. Aug 4, 2014. Experts have also told the amicus curiae that a viscera

can be preserved only if properly refrigerated. Preservation of the sample will also depend on the quality of chemicals used. If preserved in common salt water, as it is normally done, the sample will decompose in six months.

Material Method & Present Scenario

Retrospective analysis of data available in the Dept. of Forensic Medicine & Toxicology, Rajendra Institute of Medical Sciences, Ranchi from 2010 to 2015.

Result

Total Nos. of viscera preserved out of Total Nos. of Postmortem Examinations. (Table 1 and Figure 1)

- The proportion of viscera preservation varies from 7% to 12 % of the total Post Mortem examination conducted in each year.
- Average proportion of viscera preservation is 10.36%.

Table 1: Number of viscera preserved out of total postmortem Examinations

Year	Total no. of postmoetem examinations conducted	Total no. of viscera preserved	%
2010	2383	287	12.04
2011	2622	310	11.82
2012	2497	229	9.17
2013	2655	282	10.62
2014	2731	296	10.84
2015	2829	217	7.67

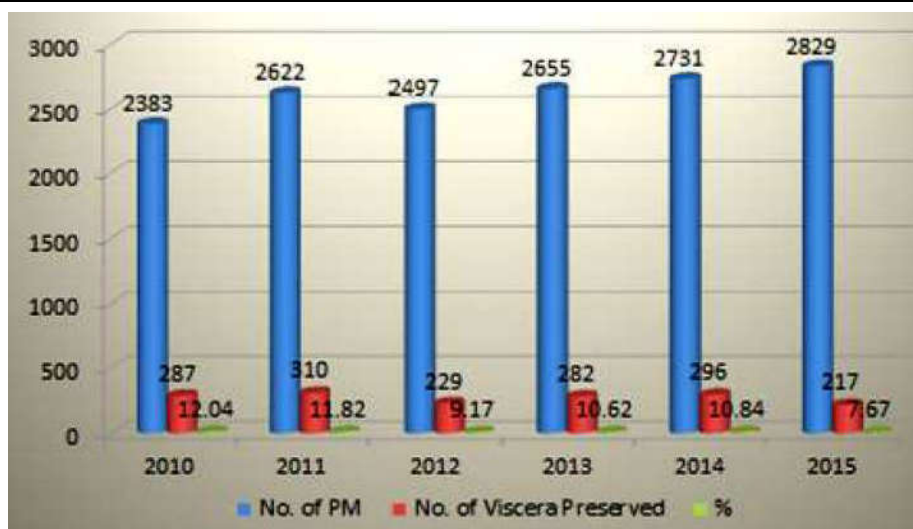


Fig. 1: Total Nos. of viscera preserved out of total Nos. postmortem examinations

Total Nos. of Viscera Received by I.O./Police for sending to FSL out of total Nos. of viscera preserved (Table 2 and Figure 2)

Out of the total Nos. of viscera preserved, police/ IO received on an average about 11 % only (ranging

from 4.84% to 17.05%) for sending to FSL for Chemical/Toxicological analysis. The remaining viscera (about 89%) remains pending and keep on getting accumulated in the department causing scarcity of space and related other effects.

Table 2: Total nos. of viscera received by I.O./ police for sending to FSL out of total nos. of viscera preserved

Year	No of viscera preserved	No. of viscera received by io/ police	%
2010	287	46	16.02
2011	310	15	4.84
2012	225	16	7.11
2013	282	36	12.77
2014	296	24	8.11
2015	217	37	17.05



Fig. 2: Total Nos. of viscera received by I.O./police for sending to FSL out of total Nos. of viscera preserved

Duration after which viscera is being received by the police for sending to FSL (data of year 2012 only) (Table 3 and Figure 3)

- Only 11.11% viscera was received by the police within 3 months of preservation for sending to FSL for chemical analysis.
- Only 10.22% viscera was received by the police between 3 months to 6 months.
- Only 21.33% viscera was received by the Police/IO within 6 months of viscera preservation.
- 8% viscera was received by the police after 6 months of preservation of viscera.
- Even after 3 years, 70.67% of the viscera has not been received by the Police/IO for sending it to FSL.

Table 3: Duration after which viscera is being received by the police for sending to FSL (data of year 2012 only)

Duration	Number of Viscera Received by Police	% of Total (225) Viscera Preserved in 2012
0-3 month	25	11.11
3-6 month	23	10.22
6-9 month	9	4
9-12 month	7	3.11
1-2 year	2	0.89
>2 year	0	0
Not yet received even after 3 years	159	70.67

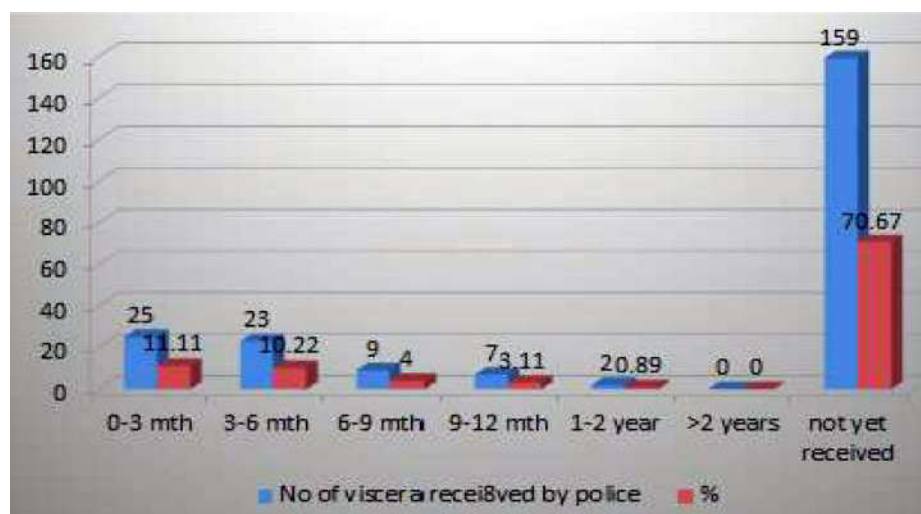


Fig. 3: Duration after which viscera is being received by the police for sending to FSL (data of year 2012 only)

Report of viscera, preserved in different yrs of PM Exams., received in 2014 (Table 4 and Figure 4)

- Viscera examination and reporting is being done by FSL in viscera which was preserved as long as 18 years ago.
- Viscera preservation and reporting time is variable from months to years and even decades.

Report of viscera, preserved in different yrs of PM Exams., received in 2015 (Table 5 and Figure 5)

- Viscera examination and reporting is being done by FSL in viscera which was preserved as long as 19 years ago.

- Time between the Viscera preservation and examination of viscera & reporting is quite variable ranging from months to years and even decades.

- About 67% of the report received in 2015 belonged to the viscera which were preserved before year 2000 i.e., more than 14 years back.

Number of viscera reports found positive w.r.t. Number of viscera reports received ((Table 6 and Figure 6)

- In 2010 about 87% reports were found positive whereas in 2015 only 5% reports were found positive.

Table 4: Report of viscera, preserved in different yrs of PM exams., Received in 2014

Year in which that viscera was preserved	Number of viscera report received in 2014	% of total viscera report received in the year 2014
1996	2	8.33
1997	4	16.67
1998	2	8.33
2009	1	4.17
2011	4	16.67
2013	8	33.33
2014	3	12.5
total	24	100

Table 5: Report of viscera, preserved in different yrs of PM exams., received in 2015

Year in which the viscera was preserved	Number of viscera report received in the year 2015	% of total viscera report received in the year 2015
1996	2	1.94
1997	3	2.91
1998	19	18.45
1999	34	33.01
2000	12	11.65
2007	1	0.97
2011	3	2.91
2012	4	3.88
2013	8	7.77
2014	9	8.74
2015	8	7.77
	total=103	100

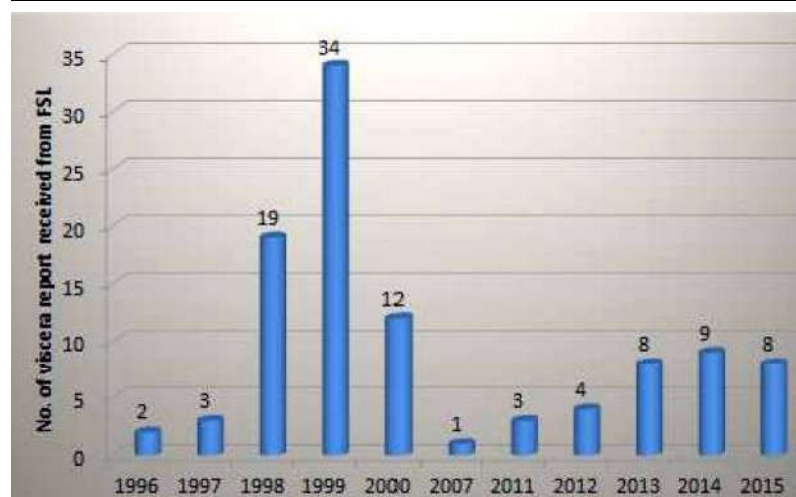


Fig. 4: Report of viscera, preserved in different yrs. of PM exams., received in 2014

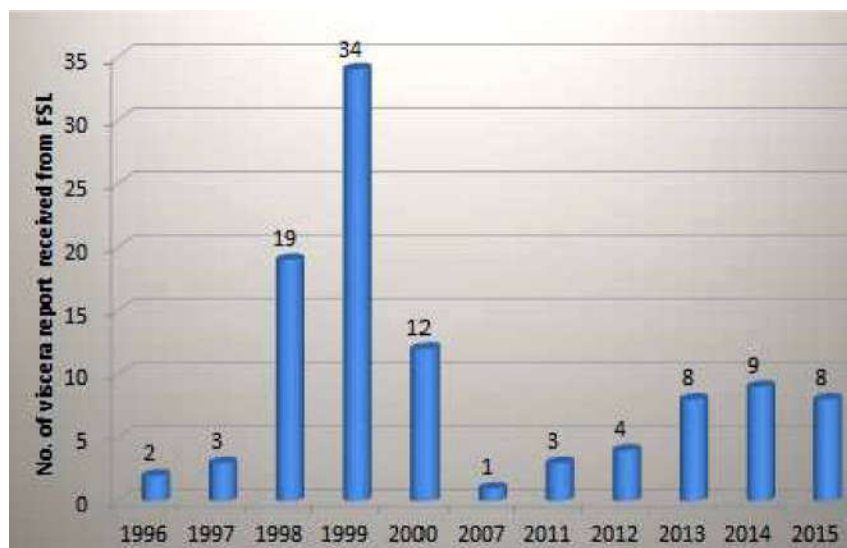


Fig. 5: Report of viscera, preserved in different yrs. of PM exams., received in 2015

- In other years (2011 to 2014) the positivity of viscera reports varied from 26% to 56%.
- Two extreme sides of the reports in 2010 and 2015 forces us to rethink on the authenticity of the viscera reports.
- OP, 3 were ethyl alcohol and 1 was a combination of OP and ethyl alcohol.
- All reports were of qualitative nature and none of them was of quantitative nature. This also gives an ambiguous interpretation.

Types of poisons detected in viscera by FSL (qualitative only) (Table 7 and Figure 7)

- In 2010, out of 40 reports being positive, 35 were organophosphorus and 5 were carbamates.
- In 2012, out of 9 reports being positive, 5 were

Analysis of Trend of Viscera examination Report for the year 2010 (Table 8 and Figure 8)

- In the month of February & May 2010, 100% of the reports were positive for poisoning.

Table 6: Number of viscera report found positive W.R.T. Number of viscera report received

Year	Number of viscera report received	Number of viscera report found positive out of total report received in that year (%)	Number of viscera report found negative out of total report received in that year (%)
2010	46	40(86.96%)	6(13.04%)
2011	15	4(26.67)	11(74.37)
2012	16	9(56.25)	7(43.75)
2013	36	14(38.89)	22(61.11)
2014	24	8(33.33)	16(66.67)
2015	103	5(4.85)	98(95.15)

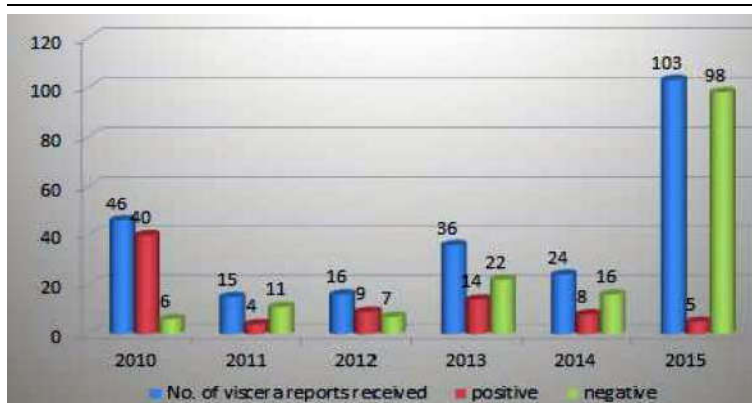


Fig. 6: Number of viscera report found positive w.r.t. number of viscera reports received

Table 7: Types of poisons detected in vicera by FSL (qualitative only)

Year of receiving viscera report	Total number of viscera found positive that year	Type of poison organa-phosphorus	Type of poison carbamates	Type of poison ethyl alcohol	Type of poison OP+ Ethyl alcohol	Type of poison aluminium phosphide
2010	40	35	5			
2011	4	3	1			
2012	9	5		3	1	
2013	14	11		1		2
2014	8	8				
2015	5	2		3		

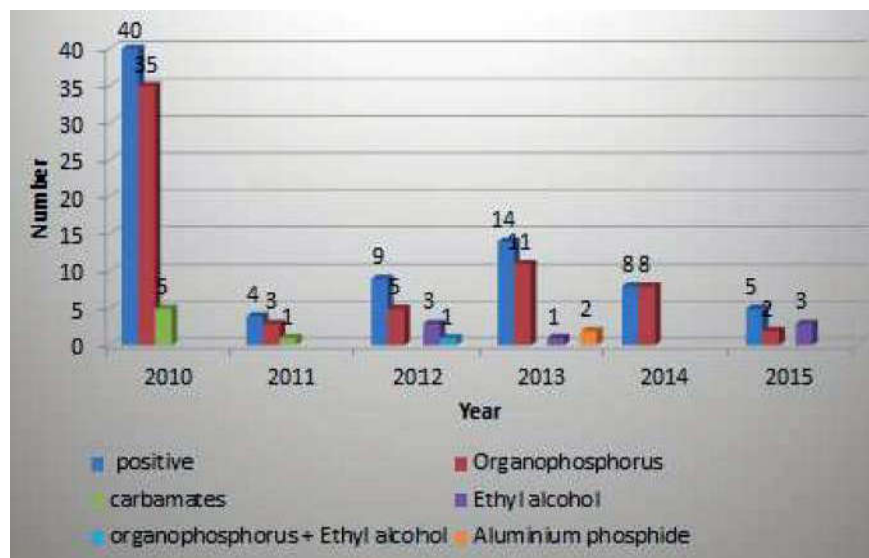


Fig. 7: Types of poisons detected in viscera by FSL (Qualitative only)

- In the first half of the year, none of the reports were negative.
- In the year 2010, only 6 (13.04%) out of 46 reports were negative.

Analysis of Trend of Viscera examination Report for the year 2015 ((Table 9 and Figure 9)

- Only 5 (4.85%) reports received in the year 2015 were positive for poisoning. Rest all were

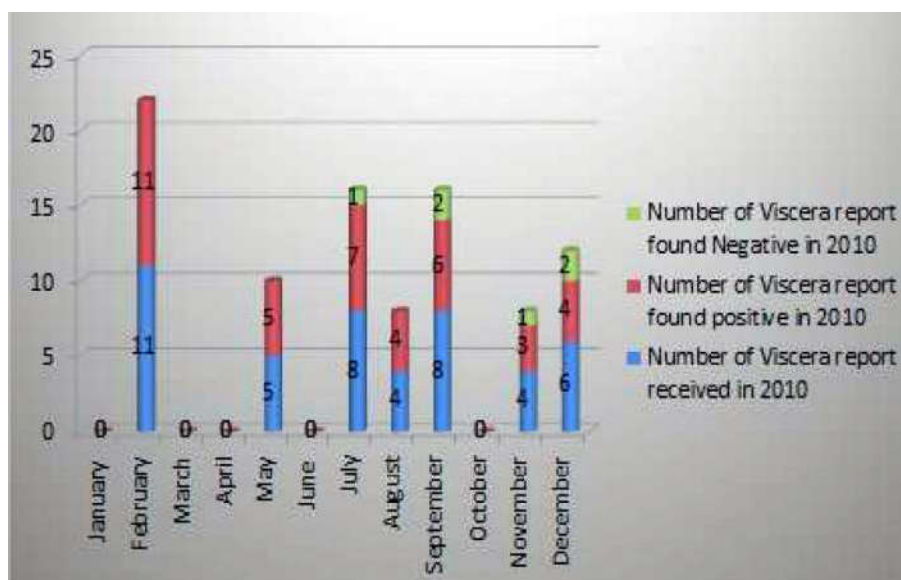


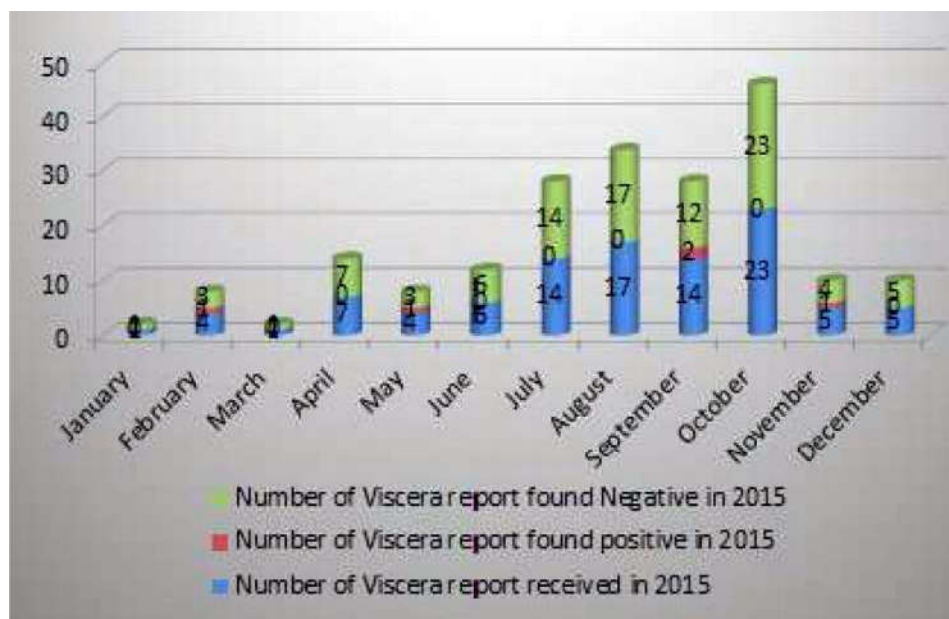
Fig. 8: Analysis of trend of viscera examination report for the year 2010

Table 8: Analysis of trend of viscera examination report for the year 2010

Month in which viscera report was received	Number of viscera report received in 2010	Number of viscera report found positive in 2010	Number of viscera report found negative in 2010
january	0	0	
february	11	11	
march	0	0	
april	0	0	
may	5	5	
june	0	0	
july	8	7	1
august	4	4	
september	8	6	2
october	0	0	
november	4	3	1
december	6	4	2

Table 9: Analysis of trend of viscera examination report for the year 2015

Month of reporting	Number of viscera report received in 2015	Number of viscera report found positive in 2015	Number of viscera report found negative in 2015
january	1	0	1
february	4	1 op	3
march	1	0	1
april	7	0	7
may	4	1 (ethyl alcohol)	3
june	6	0	6
july	14	0	14
august	17	0	17
september	14	Z(ethyl alcohol =OP)	12
october	23	0	23
november	9	1 OP	4
december	5		5

**Fig. 9:** Analysis of trend of viscera examination report for the year 2015

negative. It is just the opposite extremes of the reports received in the year 2010.

- Majority of the reporting was done in the second half of the year.

Conclusion

- The present study made a sincere attempt to analyze the existing ground reality in the light

of order passed by the Hon'ble Supreme court.

- The present study has revealed gross delay in receiving the viscera by the police for sending to the FSL and also gross delay by the FSL in examining such viscera which ultimately makes the credibility and reliability of viscera examination doubtful and questionable. This becomes of more importance when viscera being biological product is bound to automatically degrade beyond 6 months in the existing situations but viscera is examined mostly after 6 months Also pick and choose policy is widely adopted in viscera examination.
- Delay in viscera examination, improper preservation, wrong analytical technique, early disintegration of poison, complete metabolism of poison, negligible amount of poison in viscera and tempering of viscera are some important factors for Viscera examination report being Negative. More so when quantitative assessment of poison is not being done by FSL is another factor which makes the reliability of viscera examination report questionable so admissibility in the court of law for the Justice.
- Though the doctors conducting the autopsy/ postmortem examination are duty bound to comply the order of the Hon'ble Supreme Court in preservation of the viscera in all cases of suspected poisoning, yet the final cause of death to be given by the doctors should be free from any restrictions or influence by the viscera report, more so when limited items of poisons are tested by FSL, rather they should largely rely on training, knowledge and experience combined

together w.r.t. the reporting whether the cause of death is poisoning or not.

- Also, in the best interest of justice, respected courts shall be aware of the facts and shall not strictly adhere to positivity or negativity of viscera report.
- Hon'ble Supreme Court should review its order making viscera preservation mandatory in all cases of poisoning, most of the time, in the existing situation which goes in the favor of accused, under clause 'Benefit of Doubt' for reason well known to every conscious mind.

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