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'E-LORA' REGISTRATION: GAP STUDY BETWEEN THE HOSPITALS AND DIAGNOSTIC CENTRES OF ASSAM HAVING RADIOLOGY FACILITY

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ABSTRACT

Background: Hospitals and Diagnostic centres of India either Government or private are required to be registered under e-Licensing of Radiation Application (e-LORA) a portal by AERB Govt of India to ensure a comprehensive safety from ionising radiation. In Assam there are hundreds of Health care institution having facility of X-Ray and CT Scan but very often it is alleged that Hospital and Diagnostic Centers of Assam are not following the norms of AERB Govt of India. On the other hand the Radiographers working in radiology departments of Assam expected to have an adequate knowledge about the risks and preventive measures of radiation exposure. It is also expected that these radiation worker know the norms of Atomic Energy Regulatory Board (AERB) Govt of India.

Methodology : A validated questionnaire was distributed to 131 Hospital as well as to the Diagnostic centre that are having X-RAY, CT Scan or both the facility. This health care centres are located different district of Assam to balance the geographic distribution.

Results : 77% of both Government and private healthcare institution failed to registered under e-LORA and 42% of radiographer have no idea about Elora Registration and radiation safety regulation of AERB Govt of India. Out of 131 participant 18 of them refused to answer the questioners which is 13.4%. 113 numbers participant answered almost all the question among this 29% are government Hospital and 71% are the private Hospital and Diagnostic centers. From 71% of private Hospital and Diagnostic centers only 20% of them registered under e-LORA. Whereas only 4% of government registerd under e-LORA. Radiographers working in private organisation have more awareness on e-LORA then working on the government sector.

Conclusion : Health Institution of Assam fails to implement the AERB's norms. There is a need to increase the knowledge and awareness on registration of all the health care Institution under AERB Govt of India e-LORA site for safety of the Radiation worker as well as to the patients of the state of Assam.

KEYWORDS: *e-LORA, Protection, Radiation, ionising, X-ray, CT scan .*

INTRODUCTION:

After the discoveries of x rays in 1895 and radioactivity in 1896, x-ray devices and radioactive materials were applied in physics, chemistry, and medicine. In the very early days, the users of x rays were unaware that large radiation doses could cause serious biological effects. They also had no instruments to measure the strength of the radiation fields. Instead, the calibration of x-ray tubes were based on the amount of skin reddening (erythema) produced when the operator placed a hand directly in the x-ray beam.

Early ignorance of the hazards of radiation resulted in numerous unexpected injuries to patients, physicians, and scientists, and as a result, some researchers took steps to publicize the hazards and set

limits on exposure. In July 1896, only one month after the discovery of x rays, a severe case of x-ray-induced dermatitis was published.

Safety codes are prepared as per internationally accepted norms, in this regard ICRP (International council for Radiation Protection, National Council on Radiation Protection and Measurements (NCRP, the new name for the old U.S. Advisory Committee), IAEA (International Atomic Energy Agency) and in India AERB (Atomic Energy Regulatory Board) oe Govt of India are the organisation to regulate these norms.

The medical use of ionizing radiation in the healthcare systems give a significant part of radiation dose received by the human population. During the First World War X-rays for medical purposes were widely used and many leukaemia and anaemia cases were diagnosed among those who administered the ionising radiation. Both patients and medical imaging physician received ionising radiation doses suspected to be higher than expected.

In Assam though there is no data that how much X-Ray or CT Scan done per year but it is definitely would be several lakh or may be in corer. The increase in the annual estimated figure is a result of installation of X-Ray equipments even in government PHC/CHC including the increase number of private diagnostic imaging facilities are being established across the State of Assam. In addition to this there has been a rapid raise in the request and use of radiographic images in the diagnosis, treatment and management of many deseas. Indeed, further growth in the diagnostic radiography could be expected in country like us where the facilities and services are lacking. International recommendation is that to keep radiation dose to patients and Radiation worker as low as reasonably achievable (ALARA).The International Commission on Radiological Protection (ICRP) also recommended an efficient use of the ionising radiation by using the principles of justification and optimisation of X-ray exposure in limiting the radiation dose to patients. The justification of X-ray exposure involves consideration of both the benefits and harmful aspect that the X-ray procedure could provide in managing the patients as well as the degree to which the physician and the general public are scarce.

All countries must be adopt several protective measures to prevent unnecessary or unproductive medical radiation exposures.

MATERIAL AND METHODS

Primary data were obtained through a questioner given to the Radiographer of 131 Government and Private Hospitals and Diagnostic center of Assam covering all most all the district. The questioner of around 16 questions which had been validated in advance to perform a prospective observational study and was divided in three section. In this paper a section consisting of two important parameters with sub parameters are taken to understand the actual status related to complying of Govt of India's regulation on Radiation safety.

This section is focussed on:

1 Norms of AERB for better safety to the Radiation worker and to the patients
2. The safe practice with diagnostic radiology by the radiation worker
3. Awareness and knowledge on governance in ionising radiation

Data are collected from the radiographer. Questionnaire dependability was assessed as internal consistency using Cronbach's alpha coefficient

The questionnaire was distributed over a period of 18 months to the 131 number of participants (hospital and Diagnostic Center) equally distributed across all the district of Assam..

Ethical committee check was not done as the survey population did not include any at-risk groups.

RESULTS:

The study which was carried out in 131 number of Hospital and Diagnostic center shows that 77% of both Government and private healthcare institution failed to registered under e-LORA. Out of 131

participant 18 of them refused to answer the questioners which is 13.4%. 113 numbers of these participant answered almost all the question among this 29% are government hospitals and 71% is private hospitals AND diagnostic centers. 20% of private Hospital of Assam has registered under e-LORA. Whereas only 9% of government hospital has registerd under e-LORA.

DISCUSSION

This may be the first survey of this type carried out between the Hospital and Diagnostic centers of Assam to find a gap between the Norms of AERB Govt of India and implementation it by the Hospitals and Diagnosti Centers of Assam.

From 131 numbers of participant Hospital and Diagnostic Centers of Assam nine categories are made in the table shown below:

Table:

Sr no	Health care institution	Number of Health care	e-LORA YES	% YES	e-LORA-NO	%No	No response to Question	% 0f NR
1	Pvt Hospita/nurshing home Guwahati	21	5	24%	12	57%	4	19%
2	Pvt Hospita/nurshing home outside Guwahati	28	3	11%	22	78	3	11%
3	Pvt Diagnostic centre Guwahati	13	7	54%	6	46%	NILL	-
4	Pvt Diagnosti centre outside Guwahati	18	1	5%	17	95%	NILL	-
5	Govt PHC/CHC Assam	20	3	15%	17	85%	NILL	-
6	Govt Civil Hospital Assam	13	0	0%	13	100%	NILL	-
7	Total Private Health care	80	16	20%	57	71%	7	9%
8	Total govt hospital	33	3	9%	30	91%	NILL	-
9	Total private+govt	113	19	17%	87	77%	7	6%

Analysing the present study from the table it is seen that 20% of the total private Health care Institution registered under e-LORA which is very much discouraging. It is a fact that 71% have not registered or do not boarder to comply the norms of AERB. The scenario is worst with the government hospital that 91% have not registerd on e-LORA. Only 9% government hospital have reported to be registered under e-LORA.

If we analyse the data group wise Hospitals in Guwahati City have more awareness on registering on e-LORA 24% then Hospital from outside the city 11% . Likewise Diagnostic Centres of Guwahati have registerd 54% compared to 5% of Diagnosti Centres of outside the City.

Most significant findings are that 15% of PHC/CHC have shown registerd under e-LORA wher as no (0%) government civil hospital have registerd. It is really surprising to find such reports because 3% group

comes under the control of civil hospital and it is expected that e-LORA registration should have been occur in Civil Hospital first. More study on these findings may require.

Lack of awareness in this subject and lack of Government inspection apart from lack of expert to carry out such practice may be the reason of low turnout of Hospital and Diagnostic centre to comply the norms.

CONCLUSION

The study shows that:

1. There is a huge gap between the norms of AERB on e-LORA registration between the Hospitals and Diagnostic Centres of Assam
2. Guwahati city hospital have better awareness on Radiation safety regulation then to the other hospital of Assam
3. Govenment Hospital show most awful in registering on e-LORA .

BIBLIOGRAPHY:

1.IAEA (1996) International basic safety standards for protection against Ionizing radiation and for the safety of radiation sources, Safety Series no. 115-1, IAEA, Vienna
2. IAEA (2002) Radiological protection for medical exposure to ionizing radiation.
3. IAEA Safety Standard Series No. RS-G-1.5, IAEA, Vienna
4. ICRP (1977) Publication 26; Annals of the ICRP 1(3). Recommendations of the International Commission on Radiological Protection, Pergamon Press, Oxford, England
5. ICRP (1991) Publication 60, Annals of the ICRP 21(1-3), Recommendations of the International Commission on Radiological Protection, Pergamon Press, Oxford, England
6. Radiation Poisoning History, *By Dr Ananya Mandal, MD*
7. AERB Safety Code, (Code No. AERB/SE/MED-2), Mumbai 2001:1-20.
8. Radiation protection manual, Mr Arun Kausik. Dr anupam mandal, Dr BS Dwarkanathy, Mr RP Tripathi.Institute of Nuclear Medicine and allied science, DRDO, New-Delhi
9. Medical effects and risks of exposure to ionizing radiation; Fred A Mettler,Published 6 March 2012 • IOP Publishing Ltd • Journal of Radiological Protection, Volume32, Number 1
10. Medical Treatment of Radiological Casualties: Current Concepts.Kristi L. Koenig, MD' Ronald E. Goans, PhD, MD'Richard J. Hatchett, MD, Fred A. Mettler Jr., MD, MPH, Thomas A. Schumacher, CHP, Eric K. Noji, MD, MPH, David G. Jarrett, MD
11. Radiation hazards during pregnancy;
496KB http://www.iaea.org/inis/collection/NCLCollectionStore/_Public/21/075/21075151.pdf - Text VersionbyBacke, S.; Statens Inst. for Straalehygiene, Oslo (Norway)
12. APPLYING RADIATION SAFETY STANDARDS IN DIAGNOSTIC RADIOLOGYAND INTERVENTIONAL PROCEDURES USING X RAYS,Safety report series 39. IAEA, VIENNA
13. STATUTORY REQUIREMENTS FOR THE SAFE OPERATION OF MEDICAL X-RAY MACHINES BY HOSPITALS, CLINICS AND OTHER MEDICAL INSTITUTIONS IN INDIA Atomic Energy Regulatory Board, Niyamak Bhavan, Anushaktinagar, Mumbai
14. Atomic Energy Act, 1962
15. Atomic Energy (Radiation Protection) Rules {AE(RP)R}, 2004
16. Shannoun F, Zeeb H, Back C, Blettner M. Medical exposure of the population from diagnostic use of ionizing radiation in Luxembourg between 1994 and 2002. Health Phys.2006;91:154–162. [PubMed]
17. Assessment of radiation protection practices among radiographers in Lagos, Nigeria
Cletus Uche Eze, Livinus Chibuzo Abonyi, Jerome Njoku, Nicholas Kayode Irurhe, and Oluwabola Olowu Niger Med J. 2013 Nov-Dec; 54(6): 386–391.
doi: 10.4103/0300-1652.126290. PMCID: PMC3948960

18. Primary Subject RADIATION PROTECTION AND DOSIMETRY (C5300) Secondary SubjectRADIATION, THERMAL, AND OTHER ENVIRONMENTAL POLLUTANT EFFECTS ON LIVING ORGANISMS AND BIOLOGICAL MATERIALS (C1500)Source1989; 33 p,Publication Year1989, Volume21, INIS Issue19

19. Risk of cancer after low doses of ionising radiation: retrospective cohort study in 15 countries.BMJ 2005; 331 doi: http://dx.doi.org/10.1136/bmj.38499.599861.E0 (Published 07 July 2005)Cite this as: BMJ 2005;331:77

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