# RETROSPECTIVE ASSESSMENT OF PRACTICE OF RADIATION PROTECTION IN FLUOROSCOPY

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**ABSTRACT**

Ayurveda emphasizes a holistic approach to health maintenance through the strategic use of dravya (medicinal substances) for both prevention and cure of diseases. The classical principle of "Swasthasya Swasthya Rakshanam Aturasya VikaraPrashamanam" underscores the dual role of medicinal substances in maintaining health in healthy individuals and treating diseases in the afflicted. This article examines the differential applications, mechanisms, and therapeutic strategies employed in preventive versus curative medicine through Ayurvedicdravyas. Understanding these distinctions is crucial for developing comprehensive treatment protocols that address both immediate therapeutic needs and long-term health maintenance.

**Key words:** Pushyanuga, AUB,females, Raktapradara

## INTRODUCTION

Radiation is a form of energy that travels through space in the form of either wave or high speed particle. It can be produced in one of two ways: by radioactive decay of two unstable atoms or by the interaction of particles with matter 1. Radiation can be either ionizing or non-ionizingdependingonitsenergyoritspenetratingpower.Radiationhazardsfromfluoroscopy are well-documented and include deterministic effects such as skin erythema, cataract formation, and tissue necrosis at high doses, and stochastic effects such as radiation-induced malignancies at low to moderate doses.rays was used in medical after the discovery of X-rays by W.C. Roentgen on 1895, November 82.After3yearsofitsdiscoveryitwasusedinIndia.Radiationeffectcouldbeseen soon after the discovery of X-rays.In 1902 the first X-ray induced skin cancer was reported. In 1921, Ironside Bruce, at the age of 38 a radiologist in a London Hospital died of cancer. Similarly due to excessive X-ray exposures several lives were lost1.In 1915, the first radiation protection recommendation was made by the British Roentgen Society.In1921,"BritishX-rayand Radium Protection committee"wasformedtoregulatethe safeuseofradiation.In1928,itwasmadeasanInternationalcommitteeandlatertransformed as "International Commission on Radiation Protection" (ICRP) in 1950.The ICRPis the first standard position body formed, for the purpose of radiological safety. The ICRP issue periodical reports on radiation safety aspects of various application of ionizing radiation.Radiation exposure must be monitored and should be carried out regularly for both personal safety and regulatory purpose. It should also ensure the safety of patients, staff, personal and the public. The Atomic Energy(RadiationProtection)rules,2004(EarlierRPR-1971,AtomicEnergy Act, 1962) insists the radiation monitoring a mandatory one3. As per the rule all radiation workers should be monitored with a suitable radiation detecting device and use appropriate radiation protection devices. In past studies there are valuable insights are given into the clinical and management aspects related to this dissertation area. They have highlighted the prevalence, diagnostic criteria and treatment outcomes across different groups of patient.They also validated the significance of studying the patient data retro spectivelyanddemonstrate these analyses for better evaluation of effectiveness and long term prognosis. After studying the contribution of the earlier articles/journal, guidelines, the gaps remains addressed. Earlier research has often focused on either broad the study of distribution of health and disease in defined populations.This will create gap in understanding patient outcomes with relation to both clinical and therapeutic responses.

## MATERIALS AND METHODS

This study follows a retrospective observational design utilizing published literature, institutional safety manuals, professional guidelines, and international frameworks. The primarygoalistoassesstheprevailingradiationprotectionmeasuresinfluoroscopy-based procedures from a systemic perspective, rather than through new data collection.

Althoughnoprimary instruments were used, thestudyused simulationtoolssuch as comparative checklists based on ICRP/AERB/NCRPstandards, Benchmark Scoring: Literature-basedaveragecompliance metrics, Audit Templates:DerivedfromNHSEngland'sradiationprotectionQ Atemplates.These methods enable broad analysis without the logistical burden ofprimarydatacollection, useful for developing large-scaleinstitutionalpolicyreforms and allow triangulation offindingsacrossdifferenthealthsystems.

**RESULTS AND DISCUSSION**

Thefindingsfromtheretrospectiveliteraturereviewandsecond arydataanalysisrelatedto radiation protection practices in fluoroscopy.The results are primarilydrawnfromnational and international studies, supplemented by sample institutional data where available. The focus areas include compliance with personal protective equipment (PPE), dosimeter usage, training levels, and knowledge of modifiable fluoroscopic parameters.

**PPE Compliance**

Whilelead apronandthyroidshieldusageremains high(>90%),theuseof leadglassesis significantly underutilized, with compliance rates below 25% in all studies.

DosimeterUse

TheconsistentuseofTLDbadgeswasreportedinlessthan50%of respondentsacrossall studies. This noncompliance raises concerns about effective dose monitoring and occupational dose tracking.

Observational Trends from Institutional data

An internal hospital audit:

| PPE/Parameter | ComplianceRate(%) |
|---|---|
| Lead Apron | 95 |
| Thyroid Shield | 88 |
| Lead Glasses | 17 |
| Dosimeter Badge | 42 |
| Useof Collimation | 38 |
| Formal Training Completed | 29 |

Data from the literature and institutional protocols were coded thematically.Aframework matrix was used to organize findings under predefined parameters. Quantitative metrics such as percentage PPE compliance, dosimeter use, and audit frequency weresynthesized and visualized for comparative analysis.

**DISCUSSION**

The discussion reveals systemic gaps in radiation protection practices across regions and institutions. While basic PPE use is common, critical elements like training, dosimeteruse, and scatter protection are lacking. Bridging these gaps will require policy reform, institutional commitment, and continuous education for healthcare providers involved in fluoroscopic imaging.

**CONCLUSIONS**

This retrospective dissertation evaluated the current state of radiation protection practices in fluoroscopic procedures, primarily focusing on occupational safety among healthcare professionals.Whileleadapronsandthyroidshieldswerewidely used,criticalcomponents such as lead glasses and dosimeter badges remained underutilized.

The non-compliance with personal monitoring protocols, insufficient knowledge of dose- reduction techniques, and limited infrastructural safeguards such as ceiling-mounted shields reflect a systemic issue that requires both policy and practical interventions. Although international and national bodies such as the ICRP and AERB have clear guidelines, their implementation in clinical settings remains fragmented.This study concludes that while there is baseline awareness of radiation risks, it is not consistently translated into action. Limitation of this study were that noreal-time patient or worker observations were performed, limited access to raw institutional audit data and reliance on secondary reporting may lead to under estimation of non-compliance. This study recommends mandatory radiation safety training and institutional enforcement of PPE compliance, mandatory dosimeter monitoring, infrastructure investment, regulatory policy reinforcement, integration of radiation safety into curriculum and continuous medical education (CME)

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