ESTABLISHING A STATE-OF-THE-ART RADIOPHARMACY AT PKLI & RC LAHORE: CHALLENGES AND OPPORTUNITIES IN PAKISTAN

M.Manan Bhatti, Shahid Younis, Amjad Rashid, Dr. Khalid Nawaz, Talha Rafiq, Yasir Hafeez

Pakistan Kidney and Liver Institute & Research Center, Lahore

CONCEPT

Radiopharmacy underpins modern nuclear medicine by ensuring the safe, reliable supply of radiopharmaceuticals. In Pakistan, limited infrastructure has constrained Positron Emission Tomography (PET) scan availability. To overcome this, a GMP-compliant radiopharmacy was established at the Pakistan Kidney and Liver Institute & Research Center (PKLI) Lahore, offering both clinical and research opportunities

AIMS & OBJECTIVES

To share the experience of developing a state-of- the-art radiopharmacy at PKLI, highlighting the challenges encountered and opportunities created for nuclear medicine in Pakistan.

METHODOLOGY

A facility was developed with an ABT *(Dose-on- Demand Cyclotron)* and TRASIS *(All-IN-One Synthesiser)*, and fully equipped cleanrooms.

A stepwise approach was taken:

- Installation and validation of equipment.
- SOP development compliant with PNRA regulations.
- Staff training in GMP and aseptic practices.
- Implementation of QC testing for batch release.

ABT (Dose on Demand Cyclotron)

TRASIS (ALL-IN-ONE Synthesizer)

DISCUSSION

The radiopharmacy achieved reliable F-18 FDG production with >95% radiochemical purity. Key challenges included developing local expertise, ensuring strict compliance with GMP standards, and managing tracer logistics. International collaborations, vendor support, and structured training programs helped mitigate these barriers.

The experience also underscored the importance of sustainable supply chains and regulatory alignment in Pakistan.

CONCLUSION

PKLI's radiopharmacy demonstrates that advanced nuclear medicine infrastructure can be successfully developed in Pakistan. The project not only provides sustainable FDG supply for clinical Positron Emission Tomography (PET) scan but also serves as a model for future facilities, tracer diversification, and radiopharmacy training initiatives.