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| 1. **New tracers:**

a.Tc99m-HYNIC-psma:-The best time point for acquisition.-Staging of prostate carcinoma-Pre-therapy evaluation in mCRPC(metastatic castration resistant prostate cancer) (theranostics)-Comparing with Ga68-psma PET/CT scan-Psma expression in high angiogenetic tumors like RCC-In RAI refractory, high Tg (thyroglobulin) DTCs (differentiated thyroid carcinoma).b.Ga68-FAPI:-RAI refractory high Tg DTcs. c.Ga68-pentixafor-Diagnostic efficacy in GBM patients.-Diagnostic efficacy in anaplastic thyroid carcinoma patients.-Diagnostic efficacy in multiple myeloma and comparison with FDG PET/CT d.Ga68-RM2: -Diagnostic efficacy in PSMA negative mCRPCs -Diagnosis value of Ga68-RM2 PET/CT in high risk patients with prostate adenocarcinoma and comparison with Ga68-PSMA PET/CT**2-Myocardial perfusion scan:**-Comparing traditional softwares for assessing motion and ejection fraction.-evaluating patients positions effect on the perfusion images**3-Thyroid ultrasonography:**-Ecchogenesity, vascularity, nodularity of the thyroid and long term follow up in Persian cohort of MUMS.**4-Theranostics:**-Ga68-Fapi—Lu177-Fapi for RAI refractory high Tg DTcs.-Ga68-RM2---Lu177-RM2 for PSMA negative mCRPCs-Ga68-PSMA—Lu177-PSMA for mCRPC patients-Ga68-DOTA-TATE—Lu177-DOTA-TATE—Y90-DOTA-TATE for well differentiate NET.-Ga68-Pentixafor-LU177-pentixafor for GBMs.-Tc99m-HYNIC-Octerotide for well differentiate NET-Tc99m-HYNIC-PSMA for mCRPC patients.-Tc99m-HYNIC-PSMA for high risk patients with Prostate carcinoma.**5-Therapy:**-I131 for DTCs-I131 for hyperthyroidism-Rhenium 188 intra-articular injection-P32 intra-articular injection-LU177-pentixafor-Lu177-DOTA-TATE-Y90-DOTA-TATE-Lu177-PSMA-Lu177-RM2-Lu177-Fapi **6-Softwares:**a-Artificial intelligence associated softwares for evaluating the risk of thyroid nodule malignancies.b-Software for the thyroid clinic patients to assess all datas. c- Enhancement of the quality of the 68Ga – PSMA- PET/CT images using Deep learning method  for detection of prostate cancer and regional lymph node metastasis.**7-Radipharmacy:**a) Stem Cell labeling and homingb) Labeling Insulin in Oral formulationc) Liposome Labeling for Diagnostic & Therapeutic Purposesd) Gold Nanoparticles labelinge) Celecoxib labelingf) Micro sphere Labeling for Ventilationg) RIA and IRMA Assays for T3, T4 and TSHh) Quantum dot Labeling i) Ferric Nanoparticles labeling**8-Conventional nuclear oncology**- Sentinel lymph node mapping and radioguided surgery-  Lymphoscintigraphy |