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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 homing b) Labeling Insulin in Oral formulation c) Liposome Labeling for Diagnostic & Therapeutic Purposes d) Gold Nanoparticles labeling e) Celecoxib labeling f) Micro sphere Labeling for Ventilation  g) RIA and IRMA Assays for T3, T4 and TSH  h) Quantum dot Labeling  i) Ferric Nanoparticles labeling  **8-Conventional nuclear oncology**  - Sentinel lymph node mapping and radioguided surgery  -  Lymphoscintigraphy |