



Imaging of Multi-Drug Resistance (MDR)

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Clinical Image

The figure provided shows PET/CT imaging of ¹⁸F-fluoropaclitaxel [1-3] a paclitaxel (Taxol™) analog and experimental (not-FDA approved) imaging agent. Its uptake represents the biodistribution of this commonly used chemotherapeutic and, as a substrate for P-glycoprotein (Pgp), it indirectly images Pgp expression and function. Pgp-mediated Multi-Drug Resistance (MDR) is a common category of drug resistance. Paclitaxel inhibits mitosis by binding to tubulin preventing its polymerization into microtubules needed for cell growth. If a tumor shows uptake of ¹⁸F-fluoropaclitaxel, it would suggest that the tumor will respond to paclitaxel while lack of uptake (like in the majority of the tumor in this case) indicates the likelihood of Pgp-mediated multi-drug resistance, requiring treatment to include a Pgp inhibitor or use of an alternative drug.

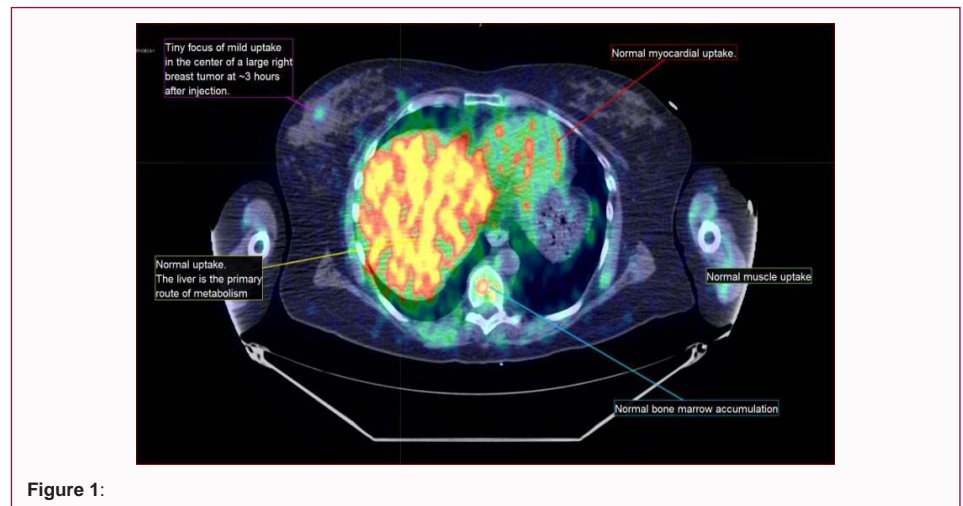


Figure 1:

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