Description and clinical implications of Incidentally-found lesions on Cone-beam CT angiography during TACE/TAE in patients with metastatic tumors

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Purpose: To describe and determine if the presence of incidentally-found miliary liver lesions (IML) on C-arm single-phase cone-beam computed tomography arteriography (CBCTA) during transarterial (chemo)embolization (TACE/TAE) portend a worse prognosis in patients with metastatic hepatic tumors. **Materials and Methods:** A 5-year HIPPA compliant, IRB approved retrospective study was performed in 52 patients with various types of metastatic hepatic tumors undergoing TACE/TAE. CBCTA was performed before (chemo)embolic delivery. IML were defined as the presence of multiple subcentimeter hyperattenuating lesions on CBCTA not identifiable on pre-procedure cross-sectional imaging (CSI) and on digital subtraction angiography. Patient characteristics, including progression-free survival due to the development of new hepatic lesions (PFS-NHL) and to the progression of the TACE/TAE treated lesion(s) (PFS-TL), were performed blindly to CBCTA findings. Variables were compared between patients with versus without IML utilizing a t-student and a log-rank tests. **Results:** Sixteen (30%) patients had IML, all identified on the CBCTA during the first TACE/TAE session. Non-significant differences were encountered in regards days from baseline CSI to TACE/TAE procedure (17.8 versus 23.6 days), baseline CSI modality (magnetic resonance use, 37.5% versus 25%), mean largest target tumor diameter (3.5 versus 3.8 cm), number of liver lesions on baseline CSI (multiple in 50% and 61%) post-TACE/TAE CSI follow-up period (18 versus 21.5 months), between patients with versus without IML, respectively. PFS-NHL was significantly shorter on patients with IML compared to patients without IML (3.8 versus 9.6 months, respectively; p= 0.035). PFS-TL (5.4 versus 8.4 months, p=0.66) was not significantly different between the two groups. **Conclusions:** IML on CBCTA are a relatively common finding in patients with metastatic hepatic tumors undergoing TACE/TAE and is highly associated with a significantly shorter

PFS-L. Further work is needed to determine the accuracy of such finding and the potential role for its application in the treatment strategy decision process.