initial response in 78.1% of the patients. Regarding the best response during the TACE series, 87.2% of the patients were overall responders. Overall survival was similar between initial responders (n = 567) and subsequent responders (n = 66; 43.8 vs. 40.1 months, P = 0.433). Likewise, overall survival was similar between initial CR (n = 366) and subsequent CR (n = 144) groups (52 vs. 46 months, P = 0.527). Multivariable Cox analyses showed that the most significant independent prognostic factor predicting overall survival was an objective response as the best response. The adjusted hazard ratio of the responders as the best response (0.216) was lower than that of the responders as the initial response (0.493). **Conclusion:** The best response observed during serial TACE, rather than the initial response, most strongly predicted overall survival in patients with intermediate-stage HCC and preserved liver function.

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Combined Transarterial Chemoembolization and Microwave Ablation Therapy for Hepatocellular Carcinoma: A Randomized Control Study

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Objectives: Few clinical researches have dealt with the treatment of patients with hepatocellular carcinoma (HCC) larger than 3 cm and smaller than 5 cm in the literature. We aimed to compare the feasibility and benefits of combined therapy (transarterial chemoembolization [TACE] and microwave ablation [MWA]) compared with TACE or MWA alone in the treatment of HCC larger than 3 cm and smaller than 5 cm. **Methods:** This was a prospective study consisting of 300 patients with solitary HCC larger than 3 cm and smaller than 5 cm. Our patients were randomized into three groups; group A included 100 patients who were treated with TACE followed by MWA after 2 weeks, group B included 100 patients who were treated with MWA alone, and group C included 100 patients who were treated with TACE alone. Patients were followed using triphasic computed tomography and blood tests including liver function tests, complete blood count, and α-fetoprotein 1 month after therapy and then every 3 months up to 3 years. Evaluation was assessed using the mRECIST criteria. **Results:** All procedures were successfully completed without any moderate or severe adverse events. Only minor adverse events were reported and treated with no impact on the patients. Group A showed significant objective response rate (complete response + partial response) in comparison with the other groups (P < 0.001). At 3 years, the overall survival (OS) was significantly higher in the group A than in group B and group C (62% versus 46% and 44%, respectively, P < 0.034). **Conclusion:** Combined therapy (TACE + MWA) in HCC larger than 3 cm and smaller than 5 cm is better than TACE or MWA alone concerning the tumor response and OS.

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Transarterial Chemoembolization of HCC: Literature Data and Combined Early Experience of Two Hospital Centers from Morocco (80 Cases)

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Objectives: Hepatocellular carcinoma is the most common primary malignancy liver. Chemoembolization is a locoregional treatment technique in specific indications. The objective of our study is to detail the technical innovations of chemoembolization evaluating its contribution to the therapeutic management of hepatocellular carcinoma. **Methods:** This is a collaborative study of two centers (Radiology Department, International University Hospital Cheikh Khalifa, and Radiology Department, Mohamed V Military Hospital), including hepatocellular cancer patients who received chemoembolization as a part of locoregional treatment. Our study is spread over 4 years and 11 months, from January 9, 2015 to January 1, 2020, on about 80 cases. The data are collected retrospectively from the medical records of the patients included in our study. **Results:** The mean age was 60 years. Female to male ratio was 3.5. 70% of the patients were cirrhotic and one patient had portal hypertension. All patients received lipiodole chemoembolization. One patient had an anatomical variant and four patients had portal thrombosis. 65 patients were diagnosed with stage B BCLC and 15 stage A BCLC. The technique was selective (20 patients) and nonselective (60 patients). Twenty patients benefited from a CHE with microcatheter. Two patients received surgical resection after chemoembolization. 46% complete response, 29% partial response, and 25% progress. 52% of complications. 4 cases of recurrence. **Conclusion:** Chemoembolization has proven its place as a reference palliative treatment for patients in the intermediate stage of the disease. Its success is based on the right selection of patients. Advances in the interventional radiology aim to broaden indications for chemoembolization.

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Management of Hypoglycemia Secondary to Pancreatic Insulinoma with Transarterial Embolization: Insulinoma to Insulin-No-More

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Educational Poster Background: Insulinomas are the most common functional neuroendocrine tumors. They are typically small, hypervascular lesions arising in the pancreas. Patients classically present with a Whipple's triad of symptoms. Medical management of hypoglycemia resulting from tumoral insulin secretion is with diet, diazoxide, octeotride, corticosteroids, and

intravenous dextrose infusion. The gold standard treatment is surgical excision. Success rates vary between 75% and 98%. Morbidity and mortality for open surgical excision are 35.4% and 32.8% for laparoscopic excision. Endoscopic ultrasound-guided ablation is gaining traction. However, positive localization of tumor in the pancreatic tail can be as low as 40%. Transarterial embolization is another minimally invasive option. There are seven published cases of embolization of insulinomas, with a success rate of 57%. We present two cases of successful embolization of pancreatic insulinoma. Patient 1 is an 83-year-old, multi-comorbid gentleman who presented with a loss of consciousness. A 3.2 cm lesion in the neck of the pancreas and another probable smaller lesion in the pancreatic tail were identified with arterial-phase computed tomography. His extensive comorbidity list included congestive cardiac failure and COPD as well his cognitive status precluded surgery and ablative options. His persistent hypoglycemic episodes were being managed with continuous dextrose infusion as well as octeotride infusions and corticosteroids. Embolization was performed with 0.4 mL of 250 µm polyphosphazene-coated hydrogel microspheres. All medical treatments were discontinued 48 h postprocedure with only one episode of symptomatic hypoglycemia and he was discharged. Six weeks postprocedure, the patient died due to an exacerbation of COPD. Patient 2 is a 53-year-old gentleman with increasingly frequent recurrent bouts of unresponsiveness and presented after being found unconscious. He had stage 4 chronic kidney disease and was a Jehovah's witness. A positron emission tomography avid lesion was identified in the uncinate process. The patient was intolerant of diazoxide and octreotride. He was also reluctant to use corticosteroids. He was offered surgical excision but elected to undergo embolization in view of the relative risk of intraoperative blood loss and his poor renal function. Embolization was performed with a Bern tip Direxion microcatheter. Coil protection of the pancreaticoduodenal artery with a 3.2-mm tapering microcoil was utilized to avoid nontarget embolization. Postembolization, his hypoglycemic symptoms improved with a significant reduction in his hypoglycemic episodes, which he only experience after periods of unplanned fasting. There have been no adverse outcomes following embolization, and this may prove to become a viable, safe option for those patients who are poor surgical candidates or not able to have endoscopic ultrasound-guided ablation.

- Pictorial summary of diagnostic imaging strategies used in our cases
- Step-wise approach to pancreatic tumor embolization including strategy to avoid nontarget embolization with the use of pancreaticoduodenal artery coil protection
- Convey that transarterial embolization may provide a useful alternative for the treatment of patients with symptomatic pancreatic insulinomas.

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Transarterial Embolization of Malignant Tumor-Related Gastrointestinal Bleeding: Technical and Clinical Efficacy

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Objectives: Gastrointestinal (GI) tract bleeding is a major cause of mortality among patients with GI malignancies. We aimed to assess the technical and clinical efficacy of transarterial embolization (TAE) as a symptomatic treatment of tumor-related GI bleeding. **Methods:** This study was conducted for patients with GI bleeding secondary to histopathologically proven different GI malignancies. Fourteen patients underwent TAE. Patients were followed up clinically for any complications or episodes of recurrent bleeding. **Results:** Fourteen patients were included (9 males and 5 females) with a mean age of 55.5 years (range 42–69 years). All procedures were technically successful with postprocedural hemorrhage control and no immediate complication. The 30-day postprocedural clinical success rate was 78.4%. Three repeated clinically successful TAE sessions were done for recurrent bleeding. The median postprocedural follow-up duration was 241 days. The 30-day mortality rate was 7.1%, while the overall mortality rate was 35.7%. **Conclusion:** TAE of tumor-related GI bleeding controlled hemorrhage with acceptable clinical success rate and without complication in this small group of patients.

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Lipidol Cone-Beam Computed Tomography Volume Measurements for Hepatocellular Carcinoma Compared to Conventional Computed Tomography after Transarterial Chemoembolization

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Objectives: Transarterial chemoembolization (TACE) is a recommended therapeutic option for many patients with hepatocellular carcinoma (HCC). Lipidol computed tomography (CT) volume measurement can predict the prognosis of unresectable HCC patients after TACE. Cone-beam CT (CBCT) technology is a useful tool for obtaining cross-sectional and three-dimensional (3D) images during TACE procedures. The aim of this study is to assess the accuracy of lipidol CBCT (Lip-CBCT) versus conventional CT volume measurements for HCC after TACE. **Methods:** Conventional TACE was used to treat 10 patients with HCC. Lip-CBCT was performed to assess lipiodol deposition directly after TACE. Unenhanced multidetector CT scan was performed 1 h after TACE. Volumetric measurement of lipidol uptake by the tumor was performed in both CBCT and conventional CT by semiautomatic 3D volume segmentation and compared using linear regression to evaluate consistency between the two imaging modalities. **Results:** The relationship between CT volumetric and Lip-CBCT volumetric was found to be statistically significant with Spearman's correlation coefficient (r = 0.706). According to the Wilcoxon signed-rank test, the median ranged from post-CBCT volumetric is 40.19 and from CT volumetric is 39.1. There was a significant correlation between plain CT value and CBCT value, with a Pearson's correlation coefficient of 0.31 ($P < 0.001$). **Conclusion:** Lip-CBCT can accurately assess the tumor volume after TACE with results statistically symmetrical to conventional CT results.