

INTRAHEPATIC CHOLANGIOCARCINOMA (ICC) TREATED WITH DSM-TACE



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Patient

- 84 year old female
- Stage III N0 M0 intrahepatic cholangiocarcinoma (ICC) involving segments IV-V-VI-VII diagnosed in August 2019
- Starting oral Capecitabine therapy in September 2019
- Lab Parameters: **HB** 11.5 g/dl | **PLT** 164.000 μ l | **ALT** 31 U/l | **AST** 53 U/l, **Serum bilirubin** 1.2 mg/dl | **Creatinine** 0.8 mg/dl | **INR** 1.14
- Abdominal follow-up CT-scan showed disease progression in December 2019 | Fig 1a-c
- Tumor board decision:
 - **DSM-TACE with 50 mg Doxorubicin**
 - Monolobar treatment planned (two treatments at 2-month interval; first treatment was targeted to posterior segmental branch of right hepatic artery, feeding segments VI-VII (lobes more involved by disease), second treatment targeted to anterior segmental branch feeding segments IV-V)



Figure 1: Abdominal follow-up CT before DSM-TACE showing disease progression



DSM-TACE Procedure

- Procedure was performed in an angiographic suite, during patient monitoring and anesthesiological assistance under local anesthesia
- Anatomy of hepatic artery and possible branches to non-target structure was confirmed by common hepatic artery selective angiography, via transfemoral retrograde approach | Fig 2
- Super-selective lobar catheterization was performed using 1.9 Fr microcatheter
- Under fluoroscopic guidance, a solution of 450 mg in 7.5 ml of microspheres type **EmboCept® S DSM 50 μ m** mixed with **50 mg Doxorubicin** and 21 ml non-ionic contrast medium was slowly infused in two steps:
 - Drug uptake: 50 mg of Doxorubicin diluted in 10 ml of saline solution plus 3.5 ml EmboCept® S DSM 50 μ m plus 15 ml non-ionic contrast medium was injected
 - 4 ml of EmboCept® S DSM 50 μ m plus 6 ml non-ionic contrast medium was injected to obtain stasis
- Endpoint for both steps was the delivery of the full planned dose with the achievement of an arterial stop-flow, which was achieved in all cases using EmboCept® S DSM 50 μ m



Figure 2: Hepatic artery selective angiography

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Outcome

- Partly transient elevation of hepatic enzymes (**AST** 90 U/l | **ALT** 19 U/l) and serum bilirubin (<2 mg/dl) at 1 day from procedure with return to normal values in three days without medical treatment
- Patient experienced mild nausea and abdominal pain, controlled and solved within 8 hours after procedure with standard medical therapy
- Patient was regularly dismissed after 48 hours, without any pain or periprocedural complications
- Partial response was apparent after second DSM-TACE (at 3-month follow-up) | Fig 3
- Tumor board decision was to **continue the treatment**
- **Complete response** with full necrosis of ICC with significant downsizing of residual liver parenchymal alteration after third DSM-TACE (at 6-month CT follow-up) | Fig 4 a-c

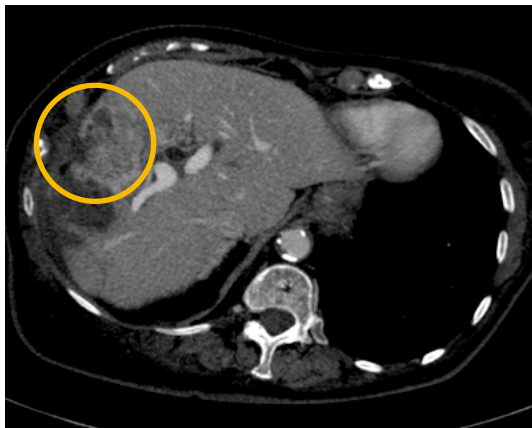


Figure 3: CT indicating partial response after second DSM-TACE at 3-month follow-up

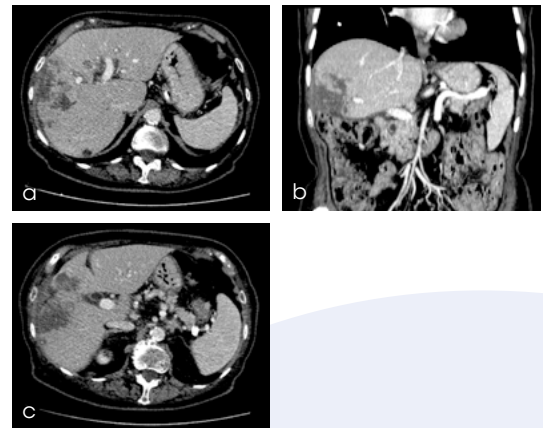


Figure 4: CT confirms complete response after third DSM-TACE at 6-month follow-up



CONCLUSION

- ▶ EmboCep[®] S DSM 50 μ m causes a temporary occlusion with a short ischemic period, allowing for an **optimal drug uptake**
- ▶ **Technical success** was achieved in all DSM-TACE procedures using EmboCep[®] S DSM 50 μ m
- ▶ DSM-TACE allows repetitive treatment with an **optimal safety profile** and low drug related toxicities
- ▶ The use of EmboCep[®] S DSM 50 μ m offers a very **effective treatment** option in ICC patients not being eligible for surgery or refractory to standard chemotherapy regimen

DSM Degradable Starch Microspheres
ICC Intrahepatic cholangiocarcinoma
TACE Transarterial chemoembolization

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