

# Safety of Lobar Hepatic Arterial Embolization in Metastatic Uveal Melanoma Patients with Underlying Gilbert's Disease

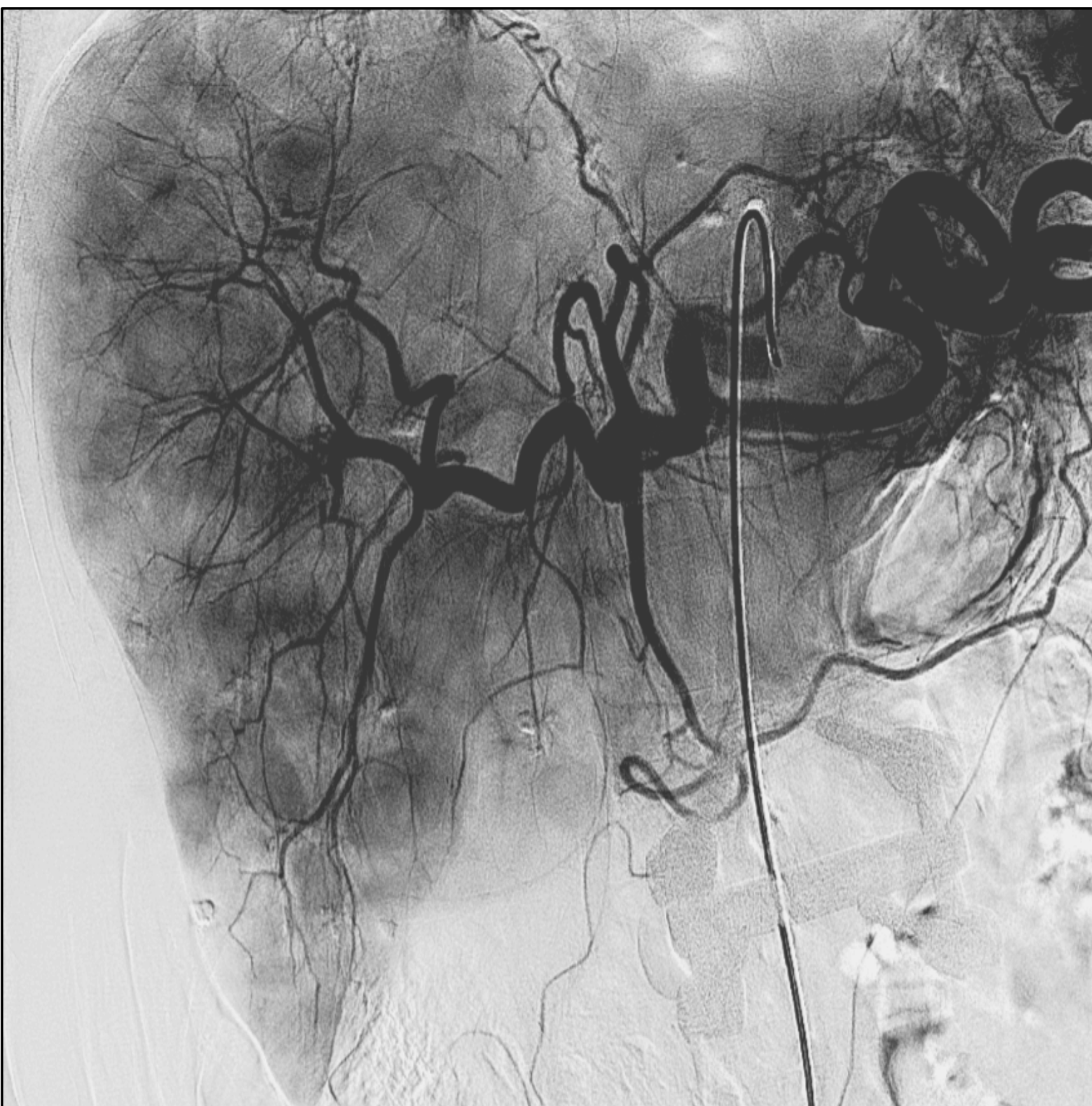
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## Introduction

- ❖ Uveal melanoma is the most common primary intraocular malignant tumor in adults.
- ❖ Up to half of all patients develop systemic metastases, with liver involvement in >90% of patients.<sup>1</sup>
- ❖ Various liver-directed, locoregional therapies (i.e. chemoembolization, immunoembolization, radioembolization, and ablation) have played a significant role in prolonging the lives of patients with metastatic uveal melanoma.<sup>2</sup>
- ❖ Elevated bilirubin levels are typically considered a relative contraindication for lobar hepatic arterial embolization treatment, given mainly the increased risk of precipitating hepatic failure.
- ❖ Gilbert's syndrome, also known as benign unconjugated hyperbilirubinemia, is a hereditary disorder of bilirubin conjugation. Gilbert's syndrome leads to elevated levels of serum bilirubin, that do not truly reflect cholestasis or liver failure and therefore should not exclude patients from targeted embolization therapy.<sup>3</sup>

## Objectives



Digital Subtraction Angiography of the Celiac Artery: Multiple Hypervascular Hepatic Tumor Blushes representing Uveal Melanoma Metastasis

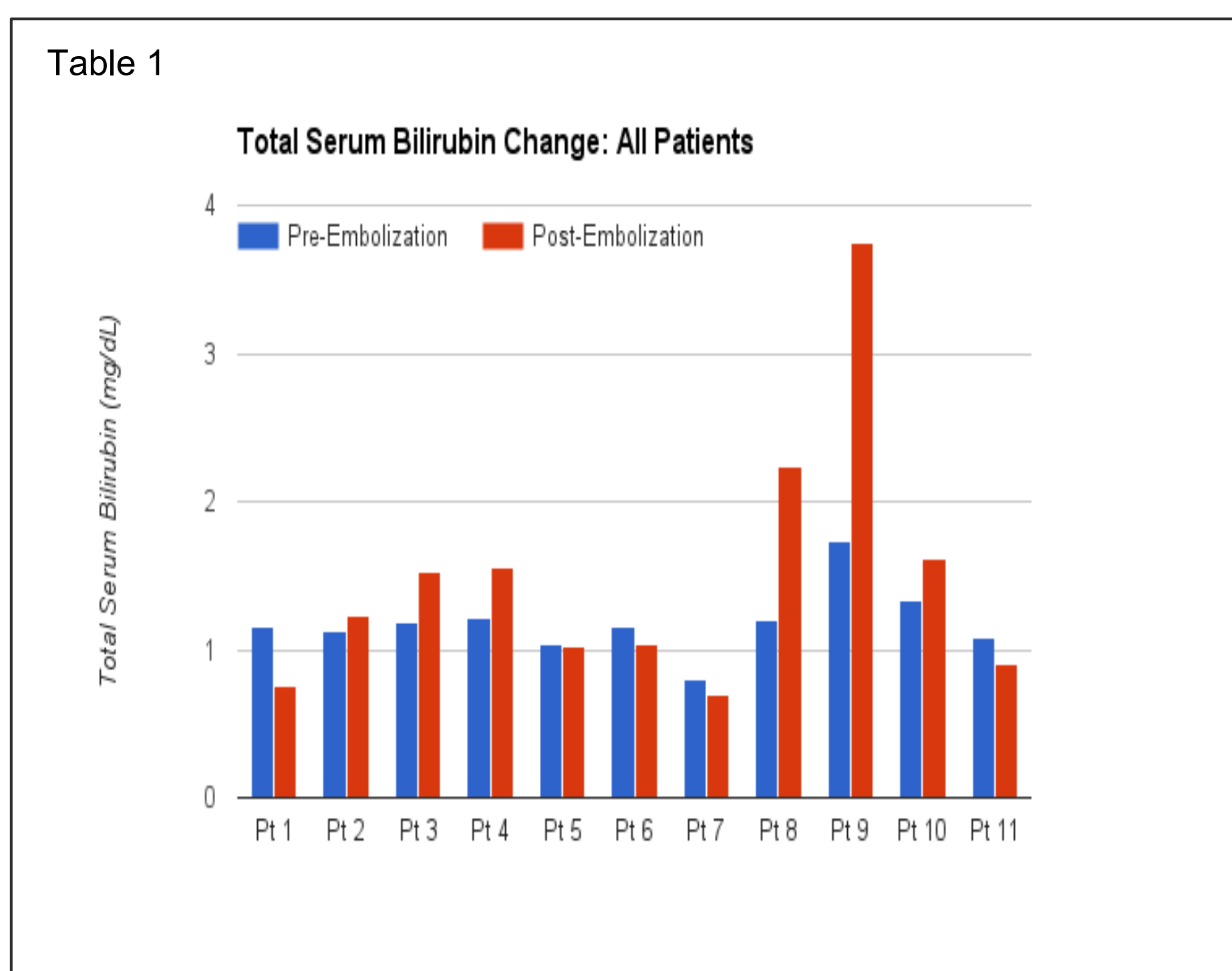
- ❖ Evaluate the safety of lobar hepatic artery treatment in patients with metastatic uveal melanoma and a diagnosis of Gilbert's disease.
- ❖ Compare pre- and post-embolization liver function tests in patients undergoing lobar hepatic arterial embolization.
- ❖ Describe complications rates and mortality of patients evaluated in the study.

## Materials and Methods

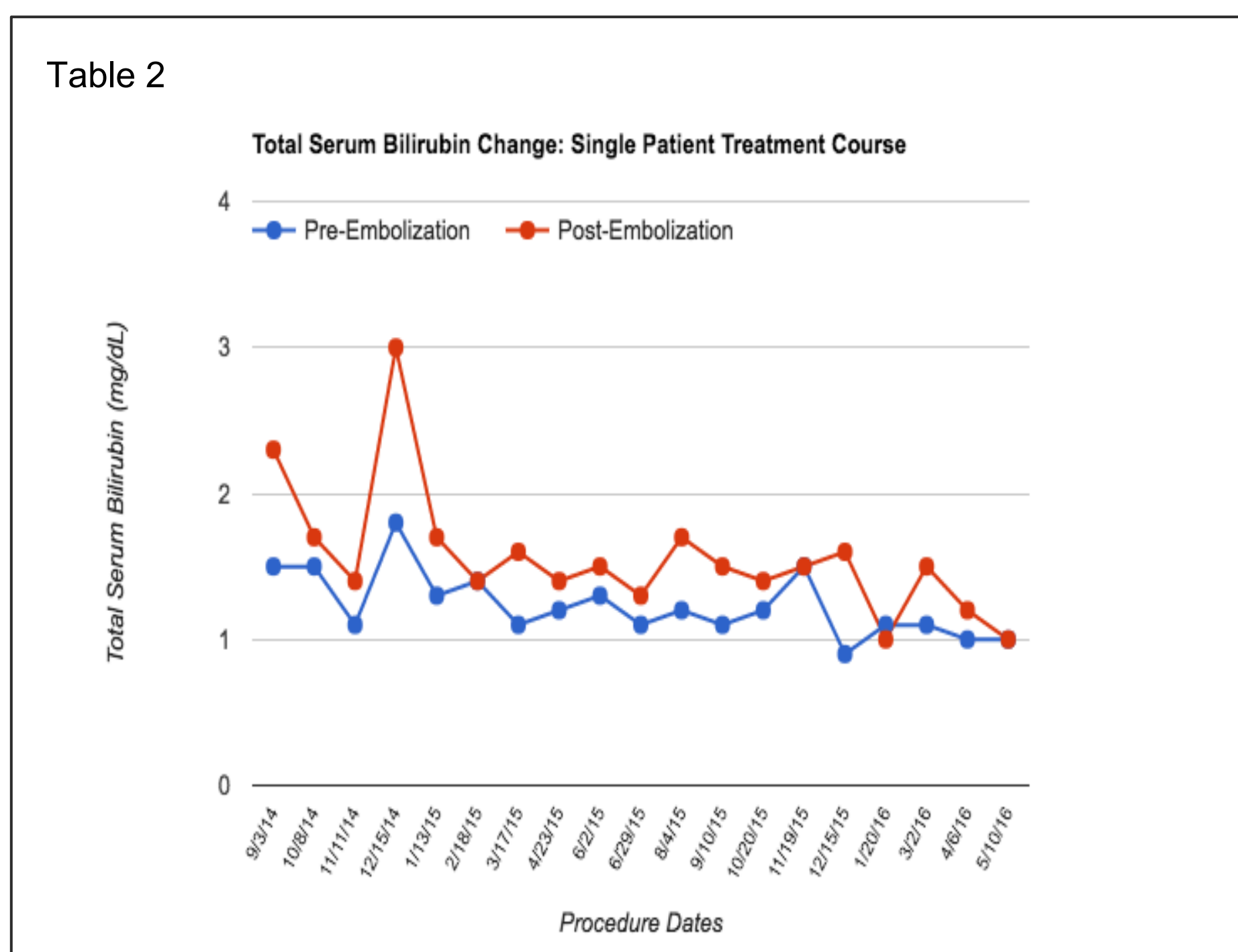
- ❖ Institution IRB approved retrospective chart review of 11 patients with hyperbilirubinemia attributed to Gilbert's disease.
- ❖ September 2003 - May 2016.
- ❖ Ninety-nine (99) embolization procedures performed on these 11 patients including: chemoembolization (42 procedures), immunoembolization (54 procedures), and radioembolization (3 procedures).

## Results

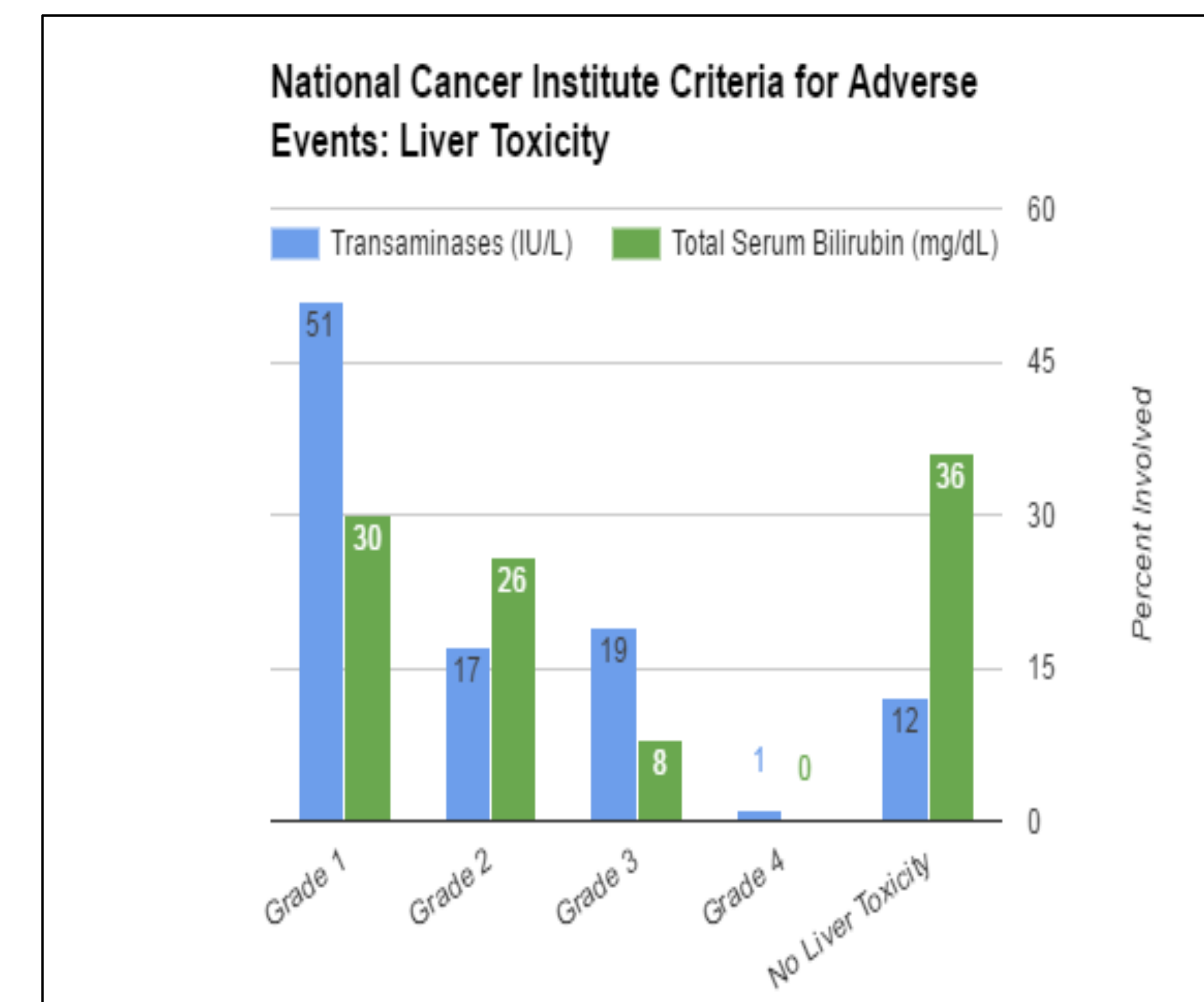
- ❖ Of the 99 procedures, 67 (68%) were performed with elevated pre-treatment total serum bilirubin levels (>1). 63 (64%) had pre-treatment total serum bilirubin levels from 1-2 mg/dL, 3 (3%) had pre-treatment levels from 2.1-3 mg/dL, and 1 (1%) had a pre-treatment level >3 mg/dL (max 3.8).
- ❖ Pre- and Post-embolization total serum bilirubin levels were evaluated in all 11 patients (Table 1)
  - Overall total serum bilirubin increased a median value of 13%.
  - Direct bilirubin levels increased a median value of 7%.
  - Indirect bilirubin levels increased a median value of 11%.



- ❖ Pre- and Post-embolization total serum bilirubin levels over a single patient's 19 treatments (Table 2)
  - Overall total serum bilirubin increased a median value of 20%.
  - Direct bilirubin levels increased a median value of 50%.
  - Indirect bilirubin levels increased a median value of 20%.



- ❖ Immediate post-procedure liver toxicities based on the NCI CTCAE (National Cancer Institute Common Terminology Criteria for Adverse Events) were documented for 96 procedures.



- ❖ Longitudinal post-embolization laboratory values were available for 72 procedures. Normalization of total serum bilirubin levels to baseline values (equivalent to levels within 0.5 mg/dL or less of pre-embolization values) occurred on average 7.5 days post-embolization (range 6 - 20 days).
- ❖ Of the 72 procedures with available longitudinal laboratory data, 90% (n=65) did not demonstrate a total serum bilirubin elevation of greater than 0.5 mg/dL above pre-embolization values.
- ❖ No toxicity prevented future embolotherapy in these patients. No deaths occurred within 30 days following treatment.

## Conclusion

- ❖ To our knowledge this has been the first outcome analysis of patients undergoing hepatic lobar arterial embolization with underlying Gilbert's syndrome.
- ❖ Hepatic artery embolization is well tolerated in patients with underlying Gilbert's disease and these patients should not be excluded for treatment based solely on laboratory values.

## References

- (1) Eschelman D, Gonsalves C, and Sato T. Transhepatic Therapies for Metastatic Uveal Melanoma. Semin Intervent Radiol. 2013 March; 30(1): 39-48.
- (2) Gonsalves C, Eschelman D, Sullivan K, et al. Radioembolization as Salvage Therapy for Hepatic Metastasis of Uveal Melanoma: A Single-Institution Experience. AJR. 2011 Feb; 196(2): 468-473.
- (3) Ruiz-Arguelles G, Ruiz-Delgado G, Gomez-Rangel D, et al. Gilbert's Syndrome disclosed during the treatment of hematological malignancies. Hematology. 2005 Feb; 10(1): 59-60.