



Hypothermic Ice-Free Conditions for Static Cold Storage of Livers for Transplantation: A Case Series

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INTRODUCTION

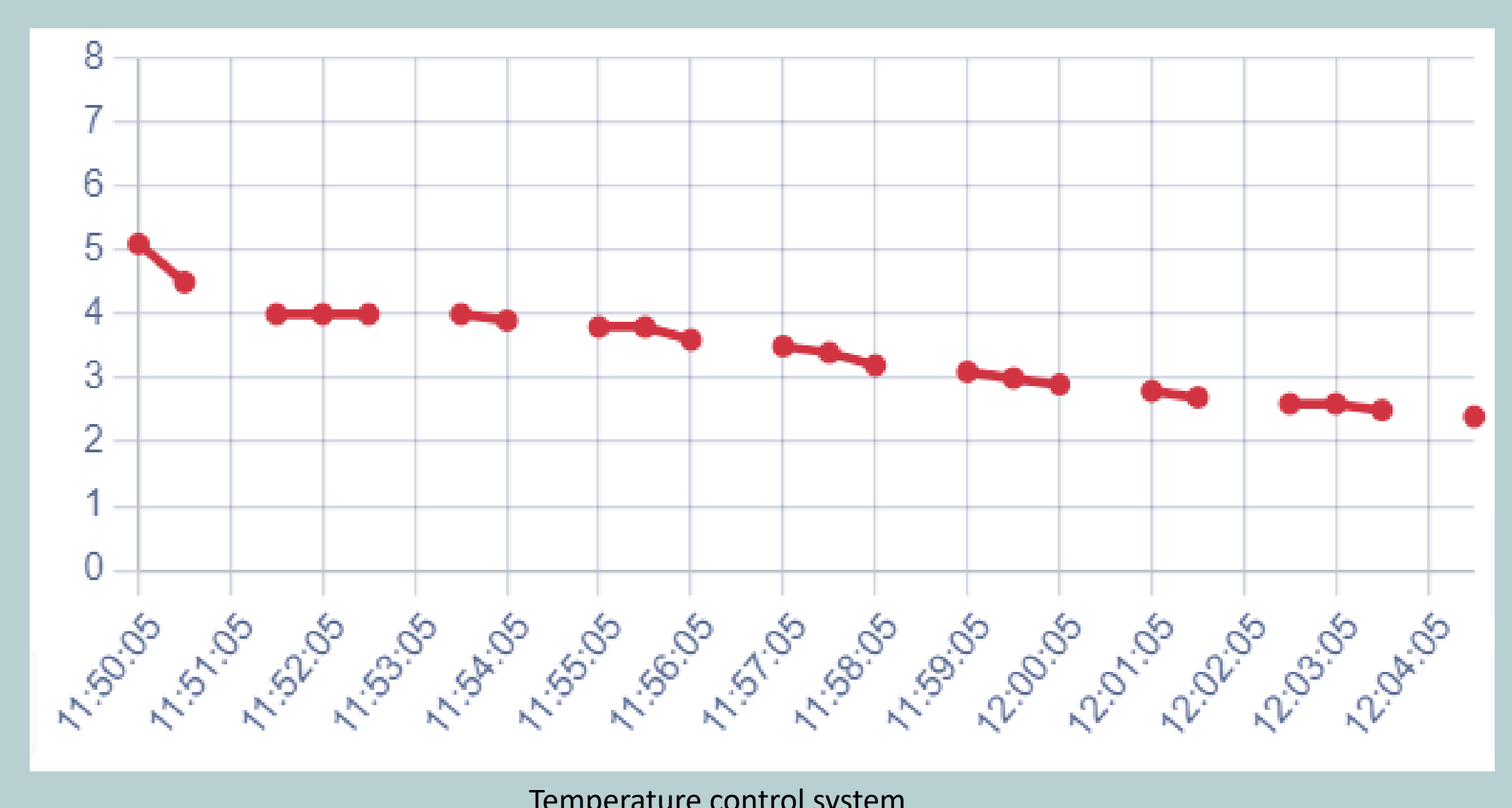
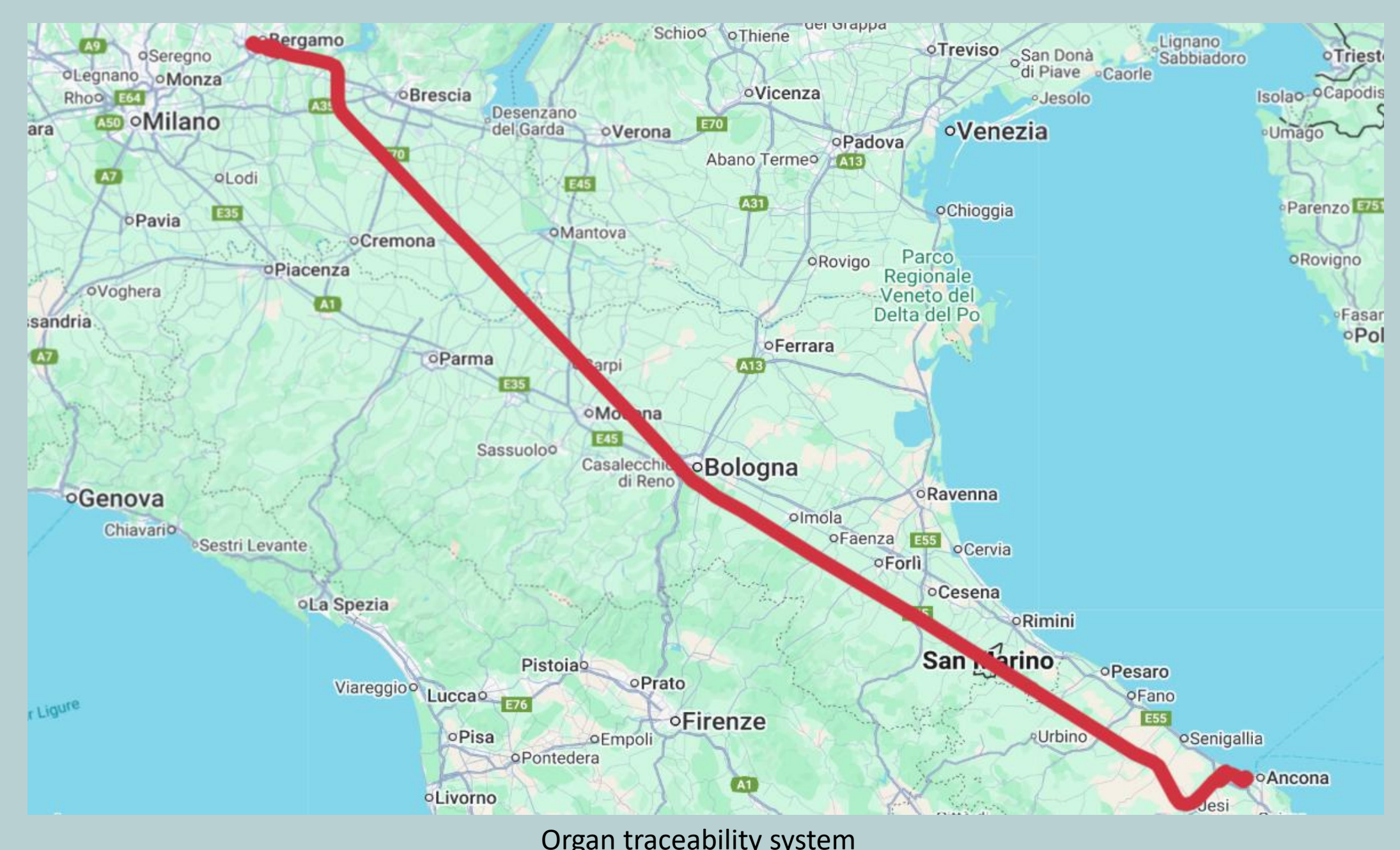
The traditional technique for donor liver preservation during transport (LPT) is static cold storage (SCS) using an icebox and a three-bag layer around the graft. It is a simple and inexpensive solution, but it has some limitations: non-standardized organ conditions, particularly non-homogeneous thermal conditions, increased risk of freezing injury, and no organ traceability during transport. Over the past decade, technological evolution has led to the introduction of new preservation systems with the aim of improving the quality of this step in the transplant process. **In this report, we present a case series of LPT using a new hypothermic SCS technology, the PerTravel® system, which allows for 2-6°C ice-free hypothermia, as well as continuous real-time monitoring of localization and LPT stability.**

METHODS

Between March and June 2025, three LPT procedures were performed with PerTravel® in an airplane. Organ preparation was carried out according to our standard techniques. A three-bag set and a solid organ container were used with standard SCS liquid. The PerTravel® LPT mission allowed continuous and real-time monitoring of organ and environmental temperature, localization and stability.

RESULTS

The maximum transport duration was 4 hours. The average recorded organ temperature was 6°C, and the average environmental temperature was 22°C-26°C. No LPT-associated adverse events were reported.



CONCLUSIONS

This case series is a preliminary report suggesting **the feasibility and safety of LPT** with a new hypothermic SCS technology, demonstrating **stable organ conditions during the process**. Further studies are needed to deeply explore the clinical impacts and benefits of standardizing conditions in LPT.