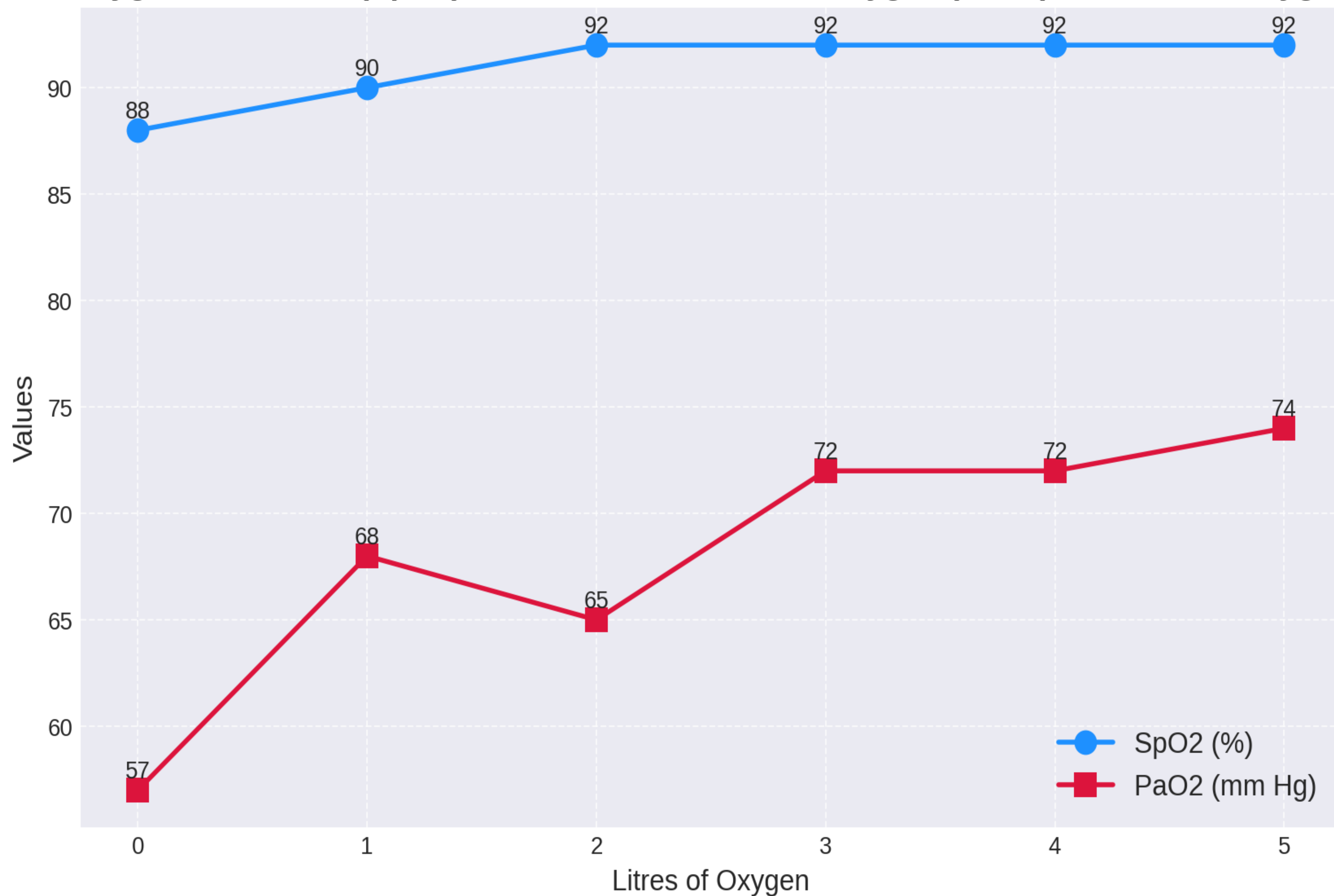


Background

- Hemoglobin Cheverly, characterized by beta-globin gene missense mutation, is a low oxygen affinity hemoglobinopathy.
- It poses challenges in accurate oxygen saturation assessment, often resulting in disparities between peripheral and arterial measurements.

Oxygen Saturation (SpO2) and Partial Pressure of Oxygen (PaO2) vs Litres of Oxygen



Litres of oxygen	SpO2	PaO2	Pco2	pH
Room air	88	57	27	7.49
1	90	68	27	7.51
2	92	65	29	7.47
3	92	72	31	7.45
4	92	72	31	7.47
5	92	74	31	7.47

Case Report

- A 40-year-old male with hyperparathyroidism presented with upper chest wall cellulitis following parathyroidectomy.
- Patient was in shock requiring vasopressors and was hypoxic .
- Patient improved clinically and was off pressors in 24 hours but was persistently hypoxic on pulse oximetry with no apparent cause
- Work up for hypoxemia including chest Xray, CTPE and echocardiogram were all unremarkable.
- Though the patient displayed persistently low oxygen saturations in the 80s, he remained asymptomatic.
- The struggle was to wean the patient off oxygen despite improvement in clinical presentation.
- Upon extensive chart review, patient was found to have a history of hemoglobin cheverly when evaluated for chronic anemia and low oxygen saturation in the past
- We also performed experiment to assess correlation between SpO2 and PaO2. We noticed discordance in SpO2 and PaO2 despite escalating oxygen levels.
- Hence, we relied on patient's clinical presentation and medical history, and ultimately weaned him off oxygen.
- Patient was subsequently downgraded to the floor with clear instruction to supplement oxygen only if patient's has clinical evidence of hypoxemia and not rely on the number on pulse oximetry.

Discussion

- This case revealed the challenges on proper management of patient with hemoglobin Cheverly without extensive investigation and overtreatment.
- Patients with Hemoglobin Cheverly might appear to have hypoxia on pulse oximetry, even when their true oxygenation status is normal and they are asymptomatic .
- Blood gas analysis with co-oximetry is often required for more accurate assessment of oxygen saturation in such cases .

Conclusion

- Hence, identifying hemoglobinopathy is crucial in proper management of patients with unknown cause of hypoxia.