Supplementary Table 1. Comparison of POM with existing oxygen-management concepts

Framework	Scope	Basis of selection	Monitoring	Adjustment/stopping rules
Individualized oxygen therapy[20-22]	Patient-specific systemic oxygen therapy	Oxygenation status, respiratory condition, and comorbidity	SpO_2, PaO_2, respiratory status	Titrate to individualized oxygen targets
Goal-directed oxygenation[21,22]	Target-range oxygen delivery	Prespecified oxygenation or physiological targets	SpO_2/PaO_2 and systemic physiology	Adjust to maintain the target range
Oxygen-dose titration[21,22]	Dose- and exposure-based adjustment	Oxygen requirement and treatment response	Delivered dose, SpO_2/PaO_2	Escalate or de-escalate to the lowest effective exposure
POM[27-32,35,38,39,61-63]	Stage-, phenotype-, and tissue-informed modulation	Stroke stage, tissue status, reperfusion status, and functional phenotype	Systemic oxygenation plus imaging, reperfusion, and neurological response	Reassess or de-escalate with target resolution or emerging safety signals

Individualized oxygen therapy, goal-directed oxygenation, and oxygen-dose titration are overlapping rather than mutually exclusive concepts. POM builds on these approaches by incorporating stroke-specific stage, phenotype, tissue status, and reperfusion context; it remains a conceptual, hypothesis-generating framework requiring prospective validation.

POM, precision oxygen modulation; SpO_2, peripheral oxygen saturation; PaO_2, arterial oxygen tension.