

A partial economic evaluation of Ambulatory oxygen during physical activity in patients with COPD: A comparative cost analysis

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Background:

Ambulatory oxygen therapy (AOT) is prescribed to chronic obstructive pulmonary disease (COPD) patients who desaturate during exertion to enable them tolerate exercise/physical activities and improve quality of life. The effectiveness evidence of AOT is conflicting but even of further concern is the limited evidence on the economic implications of it. This study examines the comparative costs of AOT compared to standard care.

Methods:

A secondary analysis of the cost data from a randomized controlled trial comparing a physical activity intervention with AOT to only a physical activity intervention in COPD patients that are normoxemic at rest but desaturate during exertion. A single-blinded trial with 133 eligible COPD patients randomized to either physical activity by a physical therapist and AOT (n=65) or only physical activity (n=74) was conducted. The participants were followed up for 6 months. Healthcare consumption and oxygen usage data were collected using questionnaires. Differences in healthcare consumption costs (US\$ 2024 prices) between arms were analyzed using generalized linear models from a healthcare payer perspective. Oxygen therapy costs are presented separately as out-of-pocket payments.

Results:

At the 6 months follow-up, the mean additional cost of providing AOT was US\$ 162 per patient, with liquid oxygen having the highest mean cost. There was no significant difference noted in healthcare consumption costs between the AOT arm and the control, (US\$ -908; 95% CI, -3,507 to 1,217, p-value 0.359). Furthermore, no significant difference was noted in overall costs between the arms, (US\$ -747; 95% CI, -3,228 to 1,405, p-value 0.447).

Conclusion:

Ambulatory oxygen therapy is costly although our results show no overall difference in care consumption in patients on AOT and those on standard care. Therefore, the cost of AOT is a rather extra cost and clinicians should consider careful prescription of AOT to mitigate that cost.