The BTS Home Oxygen Guidelines


Julia Bott
Consultant Physiotherapist
Clinical Co-lead KSS AHSN Respiratory Programme
Clinical Oxygen lead
AOT
Recommendations

▸ AOT should not be routinely offered to patients already on LTOT. (Grade D)

▸ AOT assessment should only be offered to patients already on LTOT if they are mobile outdoors. (Grade A)
Good practice point

- AOT may be offered to LTOT patients who could otherwise not achieve 15 h per day oxygen usage, or who are severely hypoxaemic and are too symptomatic to leave their house without supplemental oxygen but may need to do so, for example to attend their GP or hospital appointments. Formal assessment is not required in these circumstances. (√)

?? Portable oxygen
BTS Home Oxygen Guidelines 2015

Recommendations

▸ Ambulatory oxygen therapy (AOT) should not be routinely offered to patients who are not eligible for LTOT. (Grade B)

▸ AOT should be offered to patients for use during exercise in a PR programme or during an exercise programme following a formal assessment demonstrating improvement in exercise endurance. (Grade B)
BTS PR Guidelines 2013
Ambulatory oxygen as an adjunct to PR

Recommendations

▸ Supplemental oxygen should not be routinely used for all patients undergoing PR. (Grade B)

▸ Supplemental oxygen during PR should be offered to those who fulfil the assessment criteria for LTOT or AO unless there are compelling clinical reasons to use alternative criteria. (Grade D)
BTS PR Guidelines 2013
Ambulatory oxygen as an adjunct to PR

Good practice points

- Individuals who are prescribed oxygen but decline to use it during exercise should have this clearly documented in their notes. (√)

- Pulmonary rehabilitation provides an opportunity to assess the adequacy of the prescribed flow rate for patients already in receipt of LTOT or ambulatory oxygen. (√)
Good practice points

- …. there may be some patients, eg., with ILD and disabling breathlessness, who do not qualify for LTOT but who do desaturate on exercise, who may benefit from AOT. (√)

- Once all other medical interventions have been optimised, these patients could be considered for AOT following formal assessment and AOT use could continue following demonstration of benefit and compliance. (√)
Good practice points

▸ AOT therapy may offer patients with active lifestyles or active treatment regimens (eg, CF) additional benefits. All patients should be assessed for AOT in the context of their daily activity and therapies. (√)
Practicalities of flow rate and interface

• Only increase up to 6lpm via nasal cannulae
  – Dessication of nasal passages & airways
  – Reduce effectiveness of gas exchange
  – No conserver for high flowrate users

• Where someone (rarely) needs more, use venturi mask
Patients with high respiratory rates (common in CF and ILD) should receive AOT at a selected flow rate via a Venturi mask, which exceeds their peak tidal and exertional inspiratory flow, and be supplied with home oxygen equipment which is able to deliver the required high flow rates. (√)
Ambulatory Oxygen Considerations

- Only order if objective/subjective benefit
  - $\geq$ or $>10\%$ increase in distance walked
  - $\text{SpO}_2 > 90\%$ throughout walk
  - Borg increased by $\geq 1$ point

- Only order if patient WILL actually use it
- Consider acceptability of AO and system
- Use system patient will USE
- Review use
Good practice points

▸ Patients started on AOT should be reviewed regularly. If AOT was started during an exacerbation or when unwell, an initial review at 4–6 weeks to check it is still indicated is essential. (√)

▸ Home visits may be useful to identify problems with equipment or set-up. Further reviews should be carried out every 6 months when stable, or sooner if the patient’s clinical status changes. (√)
Ambulatory Oxygen prescribed for those NOT receiving PR

Appears to have no benefit

Liker 1975, McDonald 1989, Lacasse 2005

HOWEVER….., in the ‘definitive’ Moore study:

• only 50 of 243 patients desaturated

• AOT was given outwith any exercise, exertion or rehab experience, or instruction
Assessment
Ambulatory Oxygen Assessment

- Rest **20** mins on RA/usual LTOT
- Perform *practice* Exercise Test
  - SWT or ESWT or 6MWD
- Monitor distance/time, $\text{SpO}_2$, SOB, HR, recovery time
- Minimum **20** mins rest, then repeat process for REAL baseline data
To practice or not to practice?

An official European Respiratory Society/American Thoracic Society technical standard:
field walking tests in chronic respiratory disease

Anne E. Holland, Martijn A. Spruit, Thierry Troosters, …
Sally Singh et al ERJ Dec 2014 free download

• Current data confirm that the 6MWT, ISWT and ESWT are valid, reliable and responsive to change with some interventions. However, results are sensitive to small changes in methodology. It is important that two tests are conducted for the 6MWT and ISWT.
Ambulatory Oxygen Assessment

- If still not = or > 90% on this FR.....
- Repeat with increasing FiO$_2$ to correct exercise desaturation to > 90% where possible...

UNLESS....

...You use the ESWT
Suggested AO flow rates according to baseline ESWT desaturation:\n
<table>
<thead>
<tr>
<th>Oxygen saturation range (%)</th>
<th>Suggested AO flow rate (l/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>86-89</td>
<td>3</td>
</tr>
<tr>
<td>80-85</td>
<td>4</td>
</tr>
<tr>
<td>74-79</td>
<td>5</td>
</tr>
<tr>
<td>73 or lower</td>
<td>6</td>
</tr>
</tbody>
</table>

Ambulatory Oxygen Testing Summary

• AO testing *must* include a practice walking test
• AO testing can be simplified with a predictive FR model if you use the ESWT
• AO testing works well as part of the PR assessment, if only partially, as avoids duplication of tests
• AO type and duration should be ordered on the basis of anticipated use
• AO use must be reviewed regularly
  – adjust or withdraw if no benefit/not used
Carry out baseline walk test on air

Record baseline SpO2, heart rate and modified BORG and repeat every minute. Record total distance walked and frequency & duration of any rests.

Desaturation by ≥4% to <90%

Patient meets requirements for ambulatory oxygen

Explain options available and decide on most appropriate option for patient and whether they will carry it, wheel it or if others will carry it for them

Estimate flow rate / setting required for first walking test. After 20 mins rest pre-oxygenate til sats plateau and repeat walk test

2 baseline walks - practice walk essential

? easier to monitor continuously
? nadir and end results
? recovery time, duration of walk

Sats remain > 90%

or desaturation was < 4%

No ambulatory oxygen is required currently

Explain results to patient

And carer and write to referrer
GPP: decrease in stages if high FR

- Decrease or stop oxygen once sats recovered

- Desaturation to <90%
  
  - After 20 mins rest, pre-oxygen at revised flow rate / setting and repeat walk test

  - Desaturation to <90%
    
    - If maximum flow rate / setting was used, consider if another device may be more effective.

  - Sats maintained > 90%

- Sats maintained > 90%
  
  - Explain results to patient & gain written consent to order oxygen using home oxygen on HOCF. Complete and send HOOF and send copy to GP in line with local policy

- And carer and write to referrer

Or interface