BTS Quality Standards for Home Oxygen Use in Adults

Appendix 4

Protocol for Ambulatory Oxygen Therapy Assessment from the BTS Home Oxygen Guideline (2015)

Aims of assessment for each patient

(1) To determine if there is desaturation on exercise, defined as a drop in SpO2 of ≥4% to < 90%
(2) To determine the most appropriate device and setting to correct exercise desaturation

Considerations

- This protocol is designed to be generic and can be adapted for any valid and repeatable walking test.

- A 6 Minute Walking Test (6MWT) should be performed over a 30m course (cones 29m apart), but it is recognised that due to a lack of space a modified 10m-6MWT (cones 9m apart) may be used as an alternative(1, 2). Incremental and Endurance Shuttle Walking Tests (ESWT) are performed over a 10m course (cones 9m apart). There is some evidence to show that endurance tests, such as the ESWT, may be more sensitive than standard tests (3, 4).

- Desaturation during baseline endurance shuttle walking test (ESWT) has been found to predict required flow rate (see annex 1). This is unlikely to predict as robustly when desaturations produced during other walking tests are used but may give some guidance.

- A practice walk test should be performed and without one the improvement in walking distance from air to oxygen is likely to be overestimated.

- Local policy and individual patient capabilities will affect the maximum number of tests performed in one appointment. Two appointments may be required to titrate oxygen fully.

- It is not possible to correct SpO2 in every patient to >90% using 6 litres per minute (lpm) oxygen or the maximum settings on other devices. In this situation discussion with patient and their consultant may help determine if a higher flow rate may be suitable. Portability and / or duration of use declines considerably above 6 lpm.

- Authors have described a dose response to oxygen i.e. for each increase in flow rate there is an increase in exercise performance (3). Those whose performance has not improved on oxygen should therefore be trialled on a higher flowrate / setting.

- Carrying the cylinder / device negates the effect of the oxygen but wheeling it does not (5). Therefore patients must have AOT flow rate / setting titrated while carrying / wheeling the oxygen device as they plan to use it in everyday life.

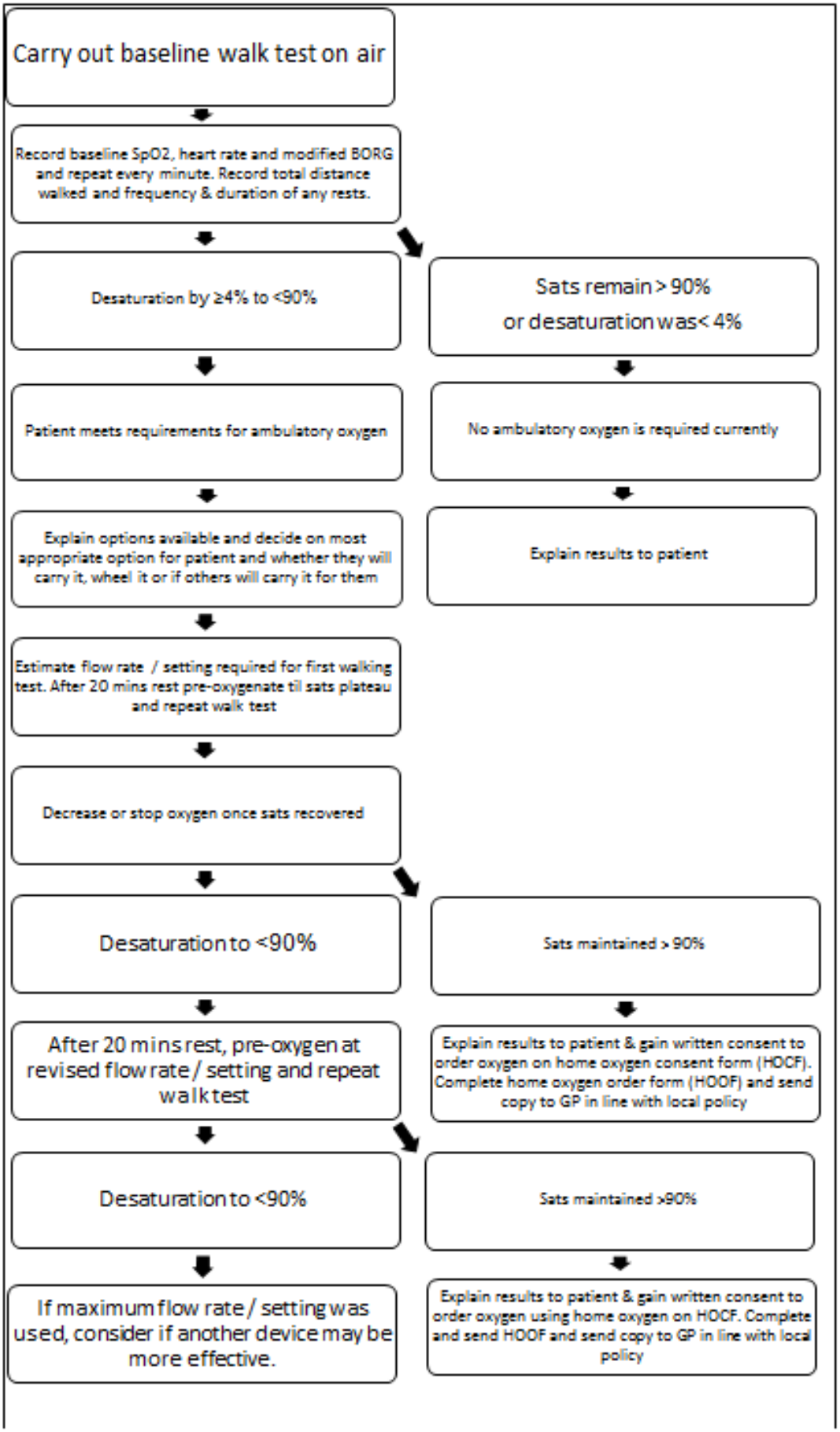
- Different oxygen devices weigh different amounts and oxygen conservers vary in sensitivity and functionality which result in devices responding differently to different patients (6). Patients must have the flow / setting titrated on the device that they are to be prescribed.

Equipment Required

- Long, flat, corridor at least 32m long (12m for modified 6MWT)
- 2 cones
- 2 chairs (placed beyond each cone)
- Stopwatch/CD & CD player
- Ambulatory oxygen equipment (hired / supplied by oxygen provider)
- Nasal cannulae
- Pulse oximeter
- Modified BORG breathlessness scale
- Oxygen risk assessment
- Patient information leaflets

Preparation

- Explain the purpose of AO
- Outline the AO assessment process
- Gain informed consent for assessment
- Confirm indication for AO (including outdoor mobility)
- Complete risk assessment
- Ensure 20 mins rest before walking test (included in discussion time)
- Set up walking test circuit
- Read / play test instructions
- Ask if the patient has any questions
- Perform practice test
- Ensure further 20 mins rest before retest


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%
Sats remain > 90%
or desaturation was< 4%
Patient meets requirements for ambulatory oxygen
No ambulatory oxygen is required currently
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
Explain results to patient
Estimate flow rate / setting required for first walking test. After 20 mins rest pre-oxygenate til sats plateau and repeat walk test
Decrease or stop oxygen once sats recovered
Desaturation to <90%
Sats maintained > 90%
After 20 mins rest, pre-oxygen at revised flow rate / setting and repeat walk test
Explain results to patient & gain written consent to order oxygen on home oxygen consent form (HOCF). Complete home oxygen order form (HOOF) and send copy to GP in line with local policy
Desaturation to <90%
Sats maintained >90%
If maximum flow rate / setting was used, consider if another device may be more effective.
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

Demonstrating a positive improvement with AOT

2 out of 3 of the markers below are required to show that the patient benefits from AOT.

- SpO2s ≥90% throughout
- ≥ 10% increase in walking distance from baseline (7)
- Improvement in BORG of at least 1 point from baseline (8)

Follow-up

8 week review:

Check patient's concordance with the oxygen order (call the oxygen delivery company to determine their usage) and compare this with the patient's diary card when they attend. Discuss any discrepancies or issues highlighted.

Troubleshoot any device issues. Review device and oxygen order as required

Annual review:

Reassess using current prescription and adjust flow rate and device as required

Annex 1

Suggested AOT flow rates according to baseline ESWT desaturations (9):

Oxygen saturation range (%)	Suggested AOT flow rate (l/min)
86-89	3
80-85	4
74-79	5
73 or below	6

References:

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