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A Single-Centre Audit of High-Flow Oxygen Use During DIBH Lung SABR

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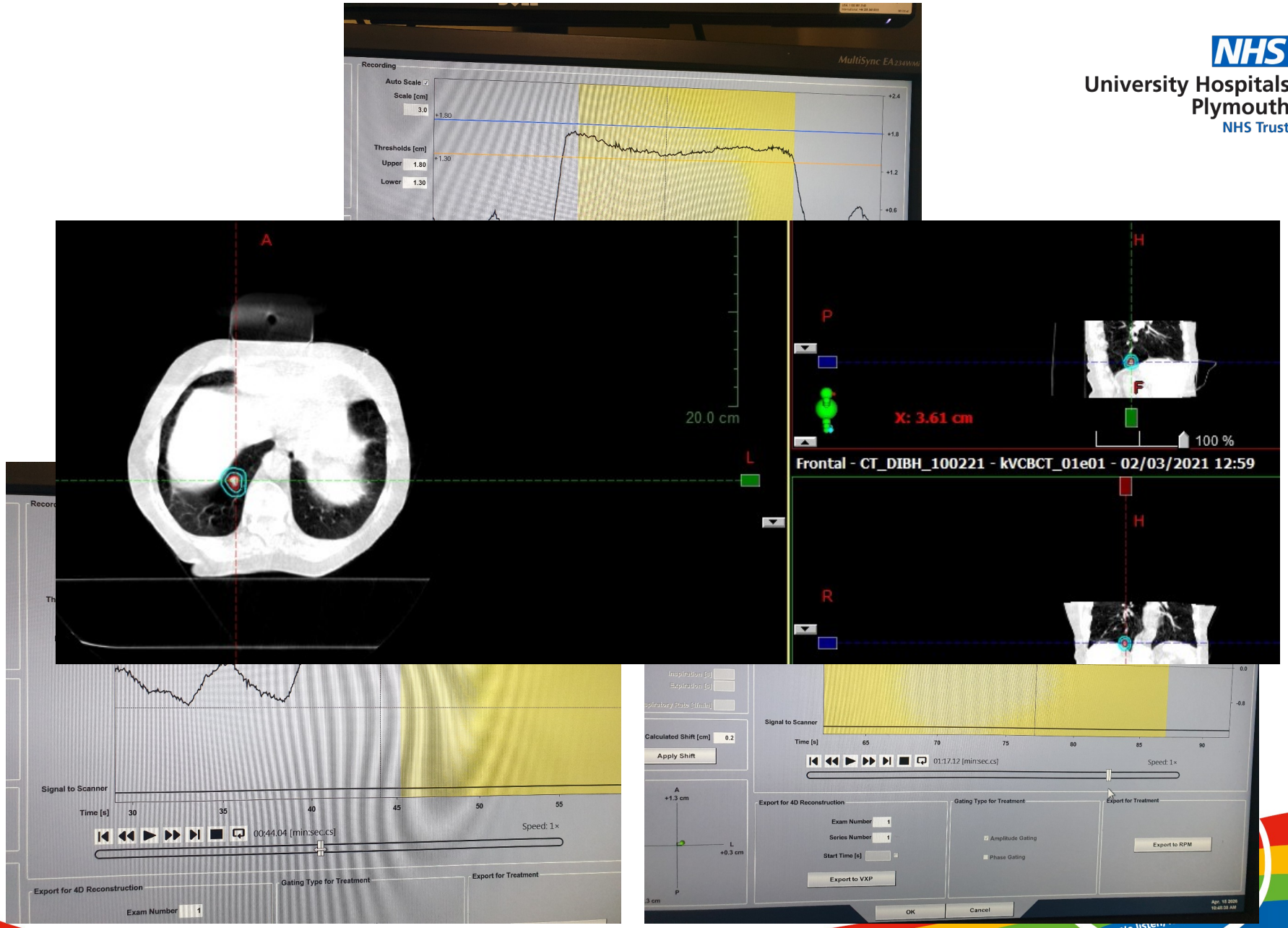
Background

- 3 Varian Linacs, GE CT Scanner , RGSC DIBH system
- Treating SABR & non-SABR lung with DIBH for several years
- Robust exclusion criteria to ensure patients can manage treatment
- Using high flow oxygen to improve DIBH started with 1 patient … then became our routine



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Implementation

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Practicalities

- No piped gases
- Needed large oxygen cylinders
- Non rebreathe masks, Extension tubing
- Oxygen prescription for each patient

Governance

- Protocol
- Risk assessment – for Oxygen cylinders in room and to use a medication, discussed with Varian

Audit Aim & Method

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- Our audit looked at evaluating our experience implementing HFO, specifically during DIBH lung SABR radiotherapy, considering:
  - Frequency of HFO use
  - Identification of barriers
  - Practical considerations and workflows
- Retrospective review was conducted of all patient referred for DIBH Lung SABR RT over 2 years, January 2024 to December 2025
- Patient records, treatment images, and staff notes were examined

Results

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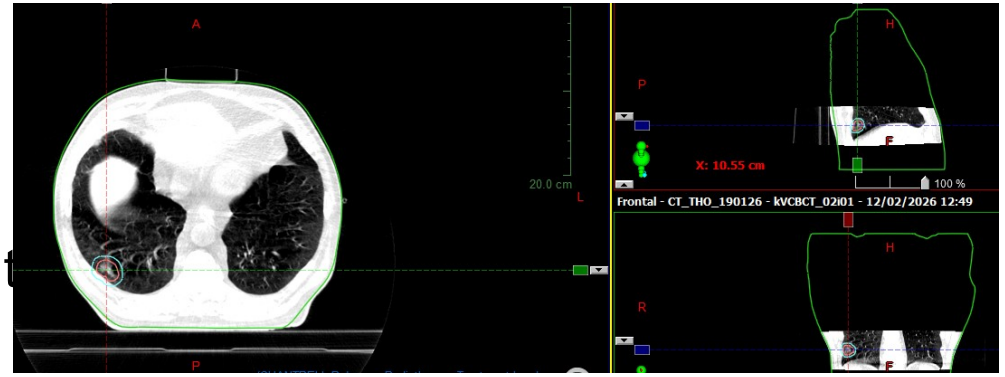
- DIBH requested for 73 of the 204 patients referred for Lung SABR
- DIBH radiotherapy delivery was achieved in 49 of 73 (67%)
- 9 of 73 (12%) patients achieved this through the additional of HFO
- 18 of 73 (33%) patients could not achieve DIBH even with HFO

Reasons for unsuccessful DIBH

- Unable to hold breath
- Difficult breathing – comorbidity
- Patients could not tolerate the extended time needed or the mask
- Equipment Limitations

Treatment delivery



Additional 5 minutes added

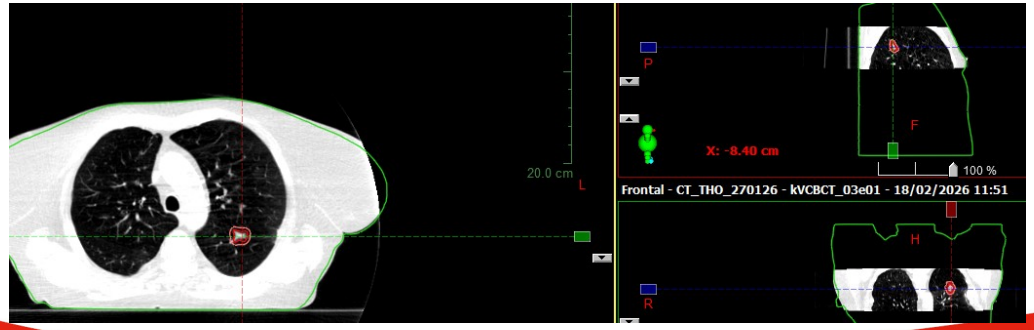
to DIBH SABR lung appointment

to set up oxygen

No rescans required for patients originally scanned in DIBH with HFO

DIBH with HFO has resulted in slight increase in coaching

Consistent BH level and tumour position achieved



Conclusion

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Use of HFO has provided a well-tolerated, easy-to-implement intervention

HFO use has enabled 12% more patients to proceed to DIBH in a population with high rates of co-morbidity

What next…

Evaluate the use of HFO for patients who can achieve DIBH as standard

- Does it improve duration and stability of BH level ?
- Will this improve capacity with quicker appointments ?

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With thanks…

Amy Warlow

Dr Bojidar Goranov

Pre Treatment and Treatment Teams at UHP

(even if they can't keep their eyes open or look at a camera!)