express CYP27B1 and can convert $25(OH)D_3$ to $1,25(OH)_2D_3$. Significant amounts of $1,25(OH)_2D_3$ can be produced locally by the involved immune cells during infection. However, VDBP controls T cell responses to vitamin D by sequestering $25(OH)D_3$ and inhibiting the production of $1,25(OH)_2D_3$ in T cells.[5]

Based on these findings, we believe that further research should also focus on VDBP in COVID-19 patients. ■

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Supplemental oxygen in COVID-19: a friend or foe?

DOI: 10.7861/clinmed.Let.20.5.3

Editor – We read the article 'Potential role of endothelial cell surface ectopic redox complexes in COVID-19 disease pathogenesis' with great interest.[1] Dr Isabella Panfoli explains the cause of viral damage-induced microvascular inflammation and thrombosis seen in susceptible people with COVID-19. She proposes ectopic expression of electron transport chain (ETC) on the luminal endothelial cell (EC) membrane secondary to viral damage as a cause of luminal oxidative stress priming microvascular thrombosis. She comments that high oxygen input in the presence of impaired ectopic ETC can result in uncontrolled augmented reactive oxygen species (ROS) production that can be prevented by strict fine tuning of oxygen flux during mechanic ventilation. This is concordant with the experimental study by Helmerhorst *et al* who demonstrated prolonged ventilation with higher oxygen concentrations (hyperoxia) induced immune response in pulmonary compartment in mice.[2] In contrast to these, Goyal *et al* put forward that hypoxia is itself pro-inflammatory and its timely detection and correction by oxygen supplementation likely improves mortality in COVID-19 patients.[3] So, titrating fractional inspired oxygen (FiO_2) to correct hypoxia but without causing hyperoxia that could result in deleterious ROS production is of paramount importance. But which clinical criteria determines correctly the transition line between harm and therapy by supplemental oxygen? What is the correct timing? Can ROS scavengers (including N-acetyl cysteine, glutathione, alpha-lipoic acid or ascorbic acid), nuclear factor erythroid 2-related factor 2 (nrf-2) agonists, ETC complex I or III inhibitors or angiotensin-II blockers be used to liberally increase FiO_2 during mechanical ventilation? Are there other sources of ROS than ECs? It seems that we need further experimental and clinical studies to answer even the optimal dosing of supplemental oxygen in correcting hypoxaemia in patients with COVID-19. ■

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Challenges to new doctors during the pandemic

DOI: 10.7861/clinmed.Let.20.5.4

Editor – Thank you for publishing the article 'FiY101: A guide for newly qualified doctors'.[1] It offers a practical approach to managing common queries and anxieties for new doctors. As a trainee working through the COVID-19 pandemic from its start, I have observed and experienced a number of challenges to ways in which we work and to our wellbeing that are relevant to newly qualified doctors. I wish to highlight a few of these alongside the helpful advice already given.

The authors rightly mention that foundation rotas are subject to change. During the pandemic, not only have rota patterns changed but a number of doctors have been redeployed to entirely different departments.[2] Often those redeployed first have been foundation doctors who had to readjust not only to a new rota but also to a new team and have had to cover patients with completely different problems at short notice – as in the case of doctors redeployed from surgical to medical jobs.

New doctors should also bear in mind the need to prioritise booking annual leave early. It is often difficult to coordinate leave with other members of the team, on-call commitments and social events.[3] There may be a temptation to delay booking leave until lockdown restrictions have been sufficiently lifted, allowing safe international travel and gathering in large groups at events. However, I would advise, based on my experience, that it would be more prudent to book leave even in the absence of definite social plans as many of us have found that we needed the time away from work simply to rest and recover.