Fulminating COVID-19 infection: my personal experience

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The author takes us on a very personal journey through his experience of a severe COVID-19 infection, hospitalisation and subsequent recovery, along with the sequelae. His experience and subsequent research have left him convinced of the value of phosphodiesterase type-5 inhibitors and testosterone in the treatment of men hospitalised with COVID-19.

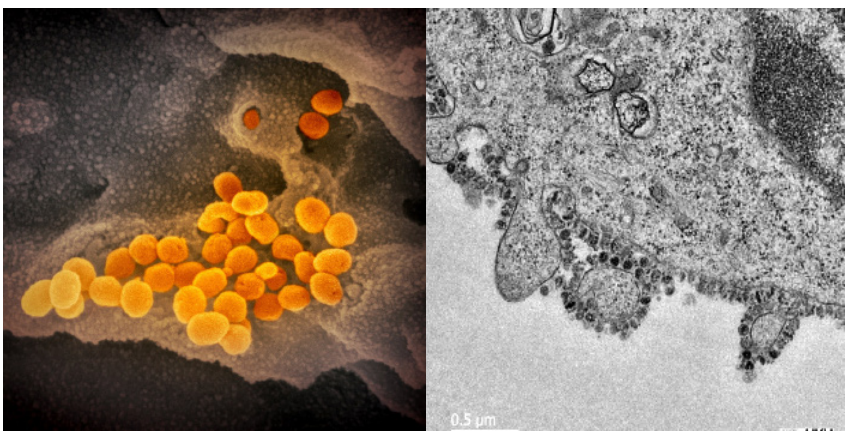

Figure 1. Scanning electron microscope image showing SARS-CoV-2 (yellow) – also known as 2019-nCoV, the virus that causes COVID-19 – emerging from the surface of cells

My story begins on 6 January 2021, at the very height of the UK COVID-19 virus (Figure 1), a few weeks before the vaccination programme commenced. My wife Sally and I were both feeling tired, but we had delayed testing for the virus as I had had a negative PCR test three days earlier prior to my weekly outpatient clinic, where I saw only two patients, face-to-face with full protection, plus three others via Zoom. We took a PCR test at the NEC Birmingham on the morning of Thursday 7 January and we both received a positive result by text the same evening. Around 5.30pm, I took the dog for a walk on a misty evening and felt short of breath after about 100 metres. At this stage, we were all told to avoid pressure on the NHS by self-isolating and I had actually volunteered to be available as a physician for the helpline service. I decided to have an early night but woke several times and by 4am was acutely short of breath, calling for Sally to ring for an ambulance, which arrived within 15 minutes. I was admitted to Good Hope Hospital on Friday 8 January. I remember catching a glimpse of my chest X-ray on admission and thinking 'I hope that this is not mine!' – the left side was opaque, as was 70% of the right side.

Nothing that I had heard in the media or at educational meetings prepared me for rapid deterioration such as this.

Progress after admission

After ambulance transfer, I was admitted to a side room on the general ward, given dexamethasone and treated in a prone position with high-flow oxygen. Regular blood gases were around 93% and I drifted into periods of restlessness and confusion until, on day 8 after admission I required intubation, and on day 9 was transferred to the high dependency ICU at the Queen Elizabeth Hospital Birmingham after multiple seizures. This was at the very height of pandemic admissions. Extubation was attempted on day 11, but I was re-intubated on day 14 and subsequently had a tracheostomy on day 28. Blood cultures grew klebsiella and intravenous antibiotics – Tazocin, vancomycin, meropenem and ceftriaxone – were given.

Lumbar puncture showed *Klebsiella meningitis* and CT scan showed encephalitis with a 2.5cm clot in the hippocampus and a small infarct in the left temporal lobe. It is interesting that, had I not survived at this stage, I would have been outside the 28-day classification for COVID-related deaths.

I have no memory of any of my six-week stay in the Queen Elizabeth Hospital until my return to Good Hope Hospital on 21 February.

Rehabilitation

My first recollection was on 23 February (day 46) when I woke up on the general ward back at Good Hope Hospital. At this stage, I was still totally confused, with no idea of the date, time or place. I was convinced that I was in Dubai and was constantly making time adjustments. I quickly learned to write the date on my hand as I knew that I would be asked the question regularly. I made a series of strange phone calls at odd times to friends and family and even believed that I had two women (one a wife and one a carer) competing for me after my discharge!

I had lost 19kg in weight, unfortunately mostly muscle, with profound wasting in the legs. I was unable to stand or walk and attempts to do so resulted in intense burning in the legs. I feared at this stage that I might not walk again. It had been two months since I had seen Sally or any of my family and I feared that I might never see them again as the reality of the visiting ban hit home.

I had been two months with an indwelling catheter and was desperate to be rid of it. I persuaded the ward sister to let me try without. Unfortunately, on one of my first solo attempts at reaching the toilet using a frame I slipped and was very fortunate not to break anything. The fall was quite a setback as I was again confined to bed. The acute shortage of physiotherapists at this time was all too clear.

At this stage, I was suffering marked lower urinary tract symptoms. I was also experiencing marked postural hypotension, so the suggestion of an alpha-blocker was not ideal. I asked Sally to send in my daily tadalafil, which had been stopped on my admission. I could imagine the nurses saying, 'he won't be needing this in here'! Within a couple of days, the urinary symptoms had settled and the first morning erections in two months appeared. Strangely this was not a question that the nurses had asked at all. I pointed out that I was overdue the testosterone undecanoate injection, which was given only about four weeks late.

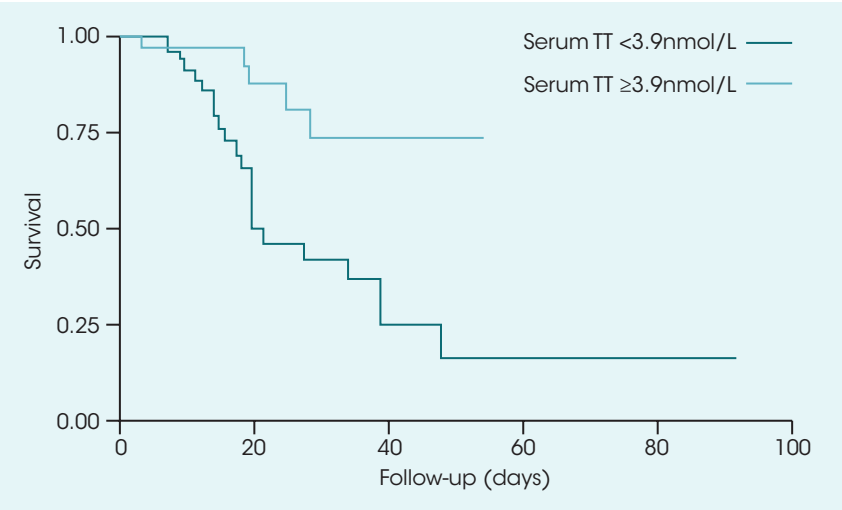

Figure 2. Data for 110 men tested for COVID-19 with serum total testosterone (TT) measurements in the total group and when stratified by the results of the SARS-CoV-2 PCR tests and mortality (Hackett *et al, Androgens* 2021, in press). Median TT level was only 3.9nmol/L

After 10 weeks in hospital and four weeks back on a general ward, I was becoming desperate to go home, despite barely being able to take more than a few steps. Sensibly, I decided to go with Sally as my 'preferred wife' – a senior physiotherapist with many years of experience! Without her, I am sure that I would have been in hospital much longer.

Past medical history

In terms of past medical history, I was pretty fit until age 59 years, when, in 2010, I noted a single episode of painless haematuria while at a medial conference in Mexico. Ultrasound scan and biopsy confirmed a T1 N0 M0 transitional cell carcinoma of the bladder, which was treated with excision and mitomycin infusions. Subsequent follow-up cystoscopies over three years were all fine, but, at random, I received an admission date for transurethral resection of the prostate and politely declined. I was offered an alpha-blocker, which caused postural hypotension and settled on tadalafil 5mg daily, which I have taken for nine years with excellent effect. In 2012, I was struggling with fatigue at work and, while at a medical conference in Madrid, I was offered a pin-prick testosterone check at one of the exhibition stands. This showed a low level of 5.2nmol/L (normal 12–30nmol/L), with a similar result on a formal blood test when I returned home. This was presumed to be a result of the cytotoxic therapy and I was commenced on testosterone undecanoate 1000mg every 12 weeks and have remained on this for eight years, with great benefit.

Recent progress

I mobilised very well over 3–4 weeks and was able to resume driving, playing golf and Zoom consultations by August, 7–8 months after my admission. I am left with receptive deafness, worse in the right ear, presumably due to the intravenous antibiotics, slight inco-ordination in the left hand, impaired balance and breathlessness on exertion. I worry

about long-term pulmonary fibrosis, now being reported in journals 12 months after severe infection. I still have complete memory loss for the six-week period in ICU, all my passwords, and all aspects of medical appraisal, which I now find a threatening process for the first time.

I also realised how lucky I was to survive, and I am very appreciative of the excellent care I received at Queen Elizabeth Hospital Birmingham. During convalescence I have written a medical textbook, a book of medical humour and published three papers on the subject of COVID.

As COVID cases continue, despite vaccination, I fear the risk of a second infection, especially with concerns over increased vulnerability to the omicron variant and the limited effect of boosters, but I feel that it is important to continue seeing patients, even if only one day per week.

My research on the subject of COVID-19 has convinced me that the higher hospital admission rate and mortality in men is associated with the catastrophic falls in testosterone levels in men compared with the protective effect of oestrogen in women (see Figure 2). Testosterone levels should be measured at COVID admission and appropriate therapy prescribed to reduce mortality and long-term morbidity, especially osteopenia and sexual dysfunction. The high-risk factors for male mortality in COVID are similar to those for hypogonadism, namely age, obesity, type 2 diabetes and certain ethnicities. Explaining catastrophic falls in testosterone levels on the basis of 'stress reaction' misses a potential opportunity for life-saving intervention. Clinical trials are clearly required.

From my own experience, I am certain that daily phosphodiesterase type-5 (PDE5) inhibitors, licensed to treat pulmonary hypertension, erectile dysfunction and lower urinary tract symptoms through improvement in endothelial dysfunction (or endothelitis, the primary lethal process in the lungs in COVID) should be widely used as protection from acute and chronic complications. One of our finest cardiologists, Dr Graham Jackson, told us 'PDE5 inhibitors are important cardiovascular drugs hijacked by urologists!' How right he was.

Currently I look forward to resuming face-to-face patient contact when it is safe to do so and regaining full fitness over the next few months.