

The far side of the pandemic: Has diabetic foot osteomyelitis been neglected due to COVID-19?

Dear editor,

The COVID-19 pandemic has limited the access of patients with diabetic foot ulcers (DFU) to healthcare facilities, increasing the risk of diabetic foot osteomyelitis (DFO).¹ It has been estimated that 20%–60% of soft tissue infections in patients with DFUs progress towards DFO, a bone infection associated with gangrene, sepsis, long hospitalisation, amputation and death.^{2,3} There is limited knowledge regarding the impact of the pandemic on the care of patients with DFO. This letter summarises the existing evidence, discusses the research gaps and outlines a number of recommendations to improve the care of patients with DFO and decrease the relevant disease burden.

A rapid literature search in major biomedical databases (Pubmed/Medline, Scopus) yields a low number of publications regarding the impact of the pandemic on DFO epidemiology, prevention, management and complications. The existing evidence culminates in two observational studies, one case report, few short communications and a relevant update of the practice guidelines the International Working Foot on Diabetic Foot (IWGDF).

Mariet and colleagues (2021) investigated the impact of the COVID-19 pandemic on DFU hospitalisation rates by means of a nationwide retrospective study conducted during the weeks 2–43 of 2020 in France. A comparison with data from the same period in 2019 revealed that the rates of hospitalisation, osteomyelitis and lower limb revascularization in DFU patients were decreased by up to 30% during the first COVID lockdown in France. Following the lift of the restrictions, DFO rates were rapidly increased reaching the pre-pandemic levels and in some cases surpassing them.⁴

Rastogi and colleagues (2021) reported on the outcomes of a cohort of DFU patients receiving teleconsultation during the first wave of COVID-19 in India. According to them targeted foot – care service by means of virtual triage did not differ significantly from physical consultations in terms of DFO diagnoses and hospitalisations.⁵ It also appears that teleconsultation enabled a physician in India to educate a patient with a soft tissue DFU infection to debride the ulcer, prevent DFO and even achieve complete epithelization within 1 month.⁶

Although both the studies illustrate the potential of telehealth in supporting DFU care, they also reveal the great difficulty to access DFU outpatient clinics during the pandemic and the subsequent risks in terms of DFO and further complications. On top of this, practicing telemedicine with limited resources and lack of formal training in digital health skills poses a threat towards physicians' liability.

Towards this end, a number of short communications presented a framework of collaboration between infectious disease specialists, pathologists and podiatrists resulting in improved DFO management and the potential of community nurses to support DFO screening during the pandemic. These studies used a number of outcomes including the decrease in usage of IV antibiotics, the increased use of per os antibiotics in outpatient settings, the decrease in the time of treatment and the dimensions of DFUs and concluded that multidisciplinary DFU health teams should take relevant action in hospitals and in the community.⁷

In the same frame, the IWGDF guidelines update urges for providing patients with mild infections with teleconsultations to prevent DFO and hospitalisation, prescribing user-friendly dressings and devices, educating them about warning signs of infections and providing patients with a suspected DFO a thorough clinical examination. Given the detrimental impact of the mental burden of the pandemic on the management of diabetes in general, the guidelines

also recommend to use these teleconsultations as a chance to remind patients to maintain a good self-hygiene, to control blood glucose, to wear their prescribed devices or footwear, to exercise daily and voice their psychosocial needs.⁸

Overall, the existing evidence suggests that restricted access to healthcare during the pandemic increased the risk of DFO development and related adverse outcomes.⁴ Nevertheless, the available data represented only one European country, leaving space only for assumptions regarding other countries and continents. The potential of telemedicine was highlighted.⁵ The latter is consistent with previous meta-analytical evidence,⁹ however, its effectiveness and risks can be better assessed with large-scale prospective observational studies and trials. Because of this, it is not possible to lay down country and region-specific strategies. In the same context, the short communications presented commendable approaches, nonetheless, validation by means of larger-scale studies is necessary, in order to evaluate and improve the real-world efficacy and feasibility of the proposed solutions.

To improve DFO prevention and management during the pandemic, health bodies and concerned authorities can consider the following steps under the pillars of real-world epidemiology, patients' education and telehealth:

- Assess the real world dimensions of the problem by means of large retrospective studies and cross-sectional investigations among patients and carers.
- Educate patient and carers in self-monitoring and care (prevention, symptoms, complications and red flags of DFO) and effective use of teleconsultation channels.
- Lay down a comprehensive telehealth strategy at healthcare system level providing regular follow up and emergency assessment to patients with DFU.
- Evaluate telehealth software and devices currently used by physicians and patients in terms of effectiveness and safety.
- Provide training to healthcare workers involved in teleconsultations. Training should cover both the efficient use of telehealth software and issues related to confidentiality and safety in digital consultations.

CONCLUSION

The COVID-19 pandemic has set significant obstacles to diabetic foot care precipitating an increase in complications such as DFO. The lack of relevant research conceals the dimensions of the problem. More research is necessary in order to improve the existing practice guidelines. Strengthening telehealth services and patients' education can improve the management and the early referral of DFOs during and after the pandemic. Also, it is essential for commissions to be constituted in every hospital, that make up by specialists on the DFO, such as clinicians from the Infection Disease unit, Pathology and Podiatry.

KEYWORDS

COVID-19, diabetic foot, osteomyelitis, prevention, ulcer

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CONFLICT OF INTEREST

The authors declare no conflicts of interest with regard to this article.

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