REIMAGINING GOUT CARE:

OUR DIVISION'S FORAY INTO TELEMEDICINE

Text by Dr Amelia Santosa

The incidence of gout is increasing in all parts of the world. As societies become more affluent, lifestyle changes seem to favour the development of this disease, which used to be dubbed the "disease of kings". The need for a structured programme for gout patients has long been recognised, due to the multifaceted treatment approach that is required to control the condition and its associated cardiovascular diseases.

The need for change

There exists a wide variability in the way gout is managed worldwide, likely due to differences in the perceived urgency for which uric acid (UA) levels should be controlled, physicians' comfort level with the traditionally feared complications of urate-lowering therapy (ULT), and the strong influence of patient preferences that determines the successful management of this condition. A 2008 clinical practice improvement project aiming to optimise UA control, conducted by our colleague Dr Anita Lim, demonstrated that target UA (<6 mg/dL; the solubility threshold of UA crystals) can be attained through a concerted multidisciplinary effort. The median time taken to achieve target UA was nine months at that time. On average, it took 2.5 clinic visits and active ULT dose titration during these visits for a patient with gout to achieve the target UA level. Some patients, however, needed up to nine visits during the timespan of this project to achieve the target. Post hoc analysis further revealed that during this period, 15% required admission to hospital with a gout flare prior to their successful achievement of target UA.

These figures illustrate the significant burden of managing gout; to the patient, who has to take many days off work to attend the many visits it takes to attain their target UA, and to the healthcare system, which has to be able to create sufficient capacity to see these patients. In addition, the interval between clinic visits should not be too far apart because this will prolong the time it takes for the patient to reach target UA, which will in turn lead to a higher risk of gout flares, to the further detriment of patients' work productivity and healthcare resource utilisation. However, clinic resources are finite and patients may not be able to take time off work at such close intervals. Our division was therefore interested to trial a new care model in gout management.

In 2016, our division embarked on another clinical practice improvement project, this time conducted by Dr Frank Tay. Its focus was to shorten the time to achieve target UA levels. In order to attain this sustainably, various aspects of gout care needed to be addressed. This included a continued emphasis on patient disease education (including flare management strategies) and a more deliberate attention to patient adherence. Our main intervention, though, involved the provision of ULT titration through telemedicine. We called this clinic the gout VMC (virtual monitoring clinic). In brief, we worked with physician extenders (in this case a rheumatology nurse) to deliver a protocolised, rheumatologist-supervised telemedicine programme to assist gout patients in achieving target UA levels in a safe and timely manner. Patients did laboratory investigations

at pre-specified time intervals at a location and time convenient to them. The rheumatologist would prescribe a ULT dose escalation after reviewing the laboratory results, and the nurse would inform the patient of the new dose telephonically. Patients then had the option to physically collect medications at their convenience or engage a courier service to have them delivered. Safety calls were embedded into the programme, to ensure that any adverse reactions were picked up early; these calls served the additional purpose of reminding patients to adhere to medications and clarifying any doubts. Face-to-face visits with physicians were required at the initial consultation to ensure accurate diagnosis and ascertain patient suitability; at any point that the patient or rheumatology nurse deemed necessary; and in our subsequent protocol enhancement at every fourth visit to ensure appropriate patient progress.

The median time taken to achieve target UA was a much shorter period of five months in this programme. Moreover, while gout flares were reported by a third of the patients, none required unscheduled clinic visits or hospital admissions, suggesting that patients were well equipped to manage their gout flares. Satisfaction among patients and rheumatologists with the programme was high. The programme also allowed us to generate clinic capacity for other patients, by reducing the number of physical clinic slots taken up for gout ULT titration.

Lessons learnt and next steps

Anchoring of the VMC by *physician extenders* allowed us to create clinic capacity while providing patients with more flexible communication touchpoints. Since the initial phase, we have now incorporated pharmacists into the gout VMC to assume the doctor's role in escalating ULT. A structured training programme with clearly defined objectives was designed to ensure that the nurses and pharmacists have a strong knowledge base. A well-defined VMC protocol further helped to streamline treatment and follow-up plans. We empower our nurses/pharmacists to escalate any patient to doctors for further input, if required. The National University of Singapore's newly launched National Collaborative Prescribing Programme may be particularly beneficial for physician extenders practising in a telemedicine programme. Going forward, we hope that we will have the opportunity to enrol our nurses and pharmacists into the course to strengthen their clinical foundation.

Appropriate *patient selection* was crucial in ensuring that patients benefit from the programme. As ULT – while mostly safe – can be associated with adverse effects, the initial face-to-face visit was important for the physician to exclude higher risk patients, such as those with limited cognitive ability and advanced renal impairment (eGFR<30 mL/min). Patient cooperation was very important, as they had to be able to communicate issues such as flares or symptoms of potential drug allergies to us during the VMC calls.

Patients were satisfied with the *flexible timing* for laboratory investigations and medication collection, which allowed them to have more regular titration of their ULT without having to miss work or other commitments. We were privileged to have been able to collaborate with primary care in the provision of laboratory services at various locations within our institution's catchment area. Such options helped to improve the accessibility of the gout VMC programme to our patients.

Conditions which rely heavily on physical examination are probably not suited for a telemedicine programme, while gout is a condition which we felt was amenable to tele-management through a clearly defined protocol. In our setting, the next group of patients whom we plan to incorporate into a VMC care model are those with inflammatory arthritis during their disease-modifying anti-rheumatic drug (DMARD) titration phase. As with our gout VMC, we will continue to *incorporate face-to-face visits at regular intervals* to ensure that any change in the patient's condition is picked up.

Most importantly, we were able to deliver holistic *multidisciplinary care* to our gout patients. The strengths brought to the table by the nurses and pharmacists, as well as the added benefit of regular telecommunication with the patients, have translated to not only more expedient care of gout, but also greater patient empowerment, as shown by their self-efficacy in managing gout flares and medication adherence, and staff satisfaction. ◆

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