Virtual rheumatology during COVID-19: 'A gift in a seemingly ugly package'

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Introduction

It is known that 2% of the American population, an estimated 6.9 million individuals, self-identify as American Indian and Alaska Native[1]. While it is also clear that early access to a rheumatologist is imperative to achieve appropriate outcomes in rheumatologic diseases, a significant gap and disparity exists in the access to rheumatology care between urban and rural areas. A current sizable rheumatology workforce shortage exists and is projected to worsen significantly, thereby posing a significant challenge[2]. In early 2020, the COVID-19 pandemic had significantly shifted healthcare to remote delivery methods to protect patients, clinicians, and hospital staff. This global condition also impacted rheumatology services.

In the pre-COVID months, the use of Telerheumatology for virtual visits increased access to Rheumatology care in rural America with good patient and provider satisfaction results[3]. In relation to the pandemic, Telerheumatology has played a key role in the management of patients with chronic rheumatic diseases, particularly for those with comorbidities, and/or on immunosuppressive therapy. Additionally, it has been contributive to maintaining social distance and 'flattening the pandemic curve'[4].

Observation

Telerheumatology came to Tahlequah, Oklahoma, the capital of Cherokee Nation (CN), at the Northeastern Health System (NHS) in the midst of the COVID-19 pandemic. The Division of Rheumatology was initiated at the NHS in January 2021, and has been providing full-time Rheumatology services since then to a large catchment area.

The clinical experience over the recent 11 months has already brought some revelations. A strikingly high prevalence and a vast spectrum of systemic inflammatory immune-mediated rheumatic diseases exists in the rural population served, including palindromic rheumatism, rheumatoid arthritis (RA), systemic lupus erythematosus (SLE) and other connective tissue diseases, psoriatic arthritis, axial and peripheral spondyloarthritides, polymyalgia rheumatica, vasculitides, microcrystalline arthritides, etc.

A mixed model offering both face-to-face and virtual Rheumatology visits was offered to the patient population. This has been shown to be the optimal combination, as it can overcome the barriers to accessing care posed by distance, while also mitigating the limitations of virtual consultation[5]. Procedures like arthrocentesis, and injection of/for various joints, carpal tunnel, bursitis, de Quervain's and flexor tenosynovitis, etc. are being scheduled as in-person follow up visits electively. The two-week Telerheumatology service combined with the two-week in-person Rheumatology service has had a major positive impact on the Rheumatology care of the patients of this rural community. Initial visits/new patients are being served in a very reasonable timeframe as are the follow-ups. All necessary musculoskeletal procedures are being done with Ultrasound-guided point of care technique and the necessary infusions are being performed on a very regular basis at our Infusion Center. It is very comforting to see that the patients and the referring providers are very grateful for and appreciative of the service, supporting the previous observation that Telerheumatology visits are non-inferior to in-person visits and are more time and cost effective.[5]

Discussion:

In agreement with the previous revelation in North American/Manitoba Native American population including Cree, Ojibway, and Metis, with smaller populations of Dakota, Dene, Sioux, and Chipewyan[6], the morphology of RA in the CN population is different. An explosive, polyarticular onset is quite common clinically with a marked preponderance of strong seropositivity for rheumatoid factor, cyclic citrullinated peptide antibody and 14.3.3 ETA conferring a potentially severe nature to the disease and a need for early biologic therapy.

The first population-based lupus registry in the Unites States American Indian and Alaska Native population demonstrated high rates of incidence and prevalence[7]. Although this study included the data from Oklahoma City area via Indian Health System, this case study addresses the Cherokee Nation population. It has also been observed that the American Indian patients with SLE have autoantibody profiles different from European American and African American patients with SLE along with poorer disease outcomes[8]. SLE is widely prevalent in the CN population with protean clinical manifestations.

A significantly high prevalence of systemic sclerosis with pulmonary involvement, including nonspecific interstitial pneumonitis and pulmonary artery hypertension has also been observed in the CN patients. There has been a paucity of previous information on this disease in this unique population/setting and more information can be provided with further observation.

In addition to the initiation of patient-care in-person and via Telemedicine, formal Rheumatology training of the Oklahoma State University (OSU) residents from our own NHS Internal Medicine residency program as well as the CN Family Medicine residency program was initiated. Concomitantly, the medical students from the OSU College of Osteopathic Medicine at the CN, the country's first tribally affiliated medical school, have started rotating within the Rheumatology Division. A diagnostic and interventional musculoskeletal point-of-care ultrasound (POCUS) has been keenly incorporated into both, teaching and clinical service. This has led to an increased interest in Rheumatology as a discipline.

Despite having some limitations that can be resolved with ongoing refinement, Telemedicine can become a "virtual" game changer for academic programs including Internal Medicine and Rheumatology, [10]. Outcome measures in future larger studies can quantify improved timely access and improved educational opportunities for residents & medical students.
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Conclusion: The COVID-19 pandemic has led to a transformation in health infrastructures and medical education/recruitment. This article emphasizes and reinforces the concept that rheumatology consultation via Telemedicine is non-inferior to in-person clinic visits and very helpful in diagnosing rheumatologic diseases early and managing them adequately especially during the time of a pandemic. Although not a novel idea, it is an intriguing and worthwhile observation in a unique setting and continues to maintain as well as expand patient-access to rheumatologic services in a rural setting.

The successful use of Telemedicine for managing Rheumatology patients supports greater exploration of this digital tool for a decentralized approach toward seamless patient care[11].

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