Respiratory Care

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REMOTE PATIENT MONITORING STUDY AMONG PATIENTS WITH ASTHMA: A SINGLE CENTER EXPERIENCE

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PURPOSE: Asthma is one of the most common chronic respiratory illnesses affecting quality of life of patients, mortality as well as a high impact on health care utilization. In the era of the COVID19 pandemic, telemedicine and remote patient monitoring (RPM) have been heavily utilized by healthcare systems and providers for patient care. In our pilot program at a large US healthcare center, we enrolled patients known to have asthma to evaluate how RPM could be of value to both the patients and providers.

METHODS: Patients included in the study had a confirmed diagnosis of moderate/severe asthma, were at least 18 years of age, and had access to an Android/iOS mobile device with internet access. The patients were excluded from the study for any conditions that would prevent them from using an app such as visual, cognitive, or other impairments that may prevent the patient from being able to participate. Patients were provided with a connected mobile spirometer, the KevaTalk app on their phones and educational introductory sessions during 9 months of the study. Each patient had their action plan and list of medications entered into the Keva365 platform by the nurse or the patient themselves. We provided a baseline patient questionnaire to assess usefulness and evaluate the app features, an ATAQ questionnaire for asthma control and a Smoking cessation questionnaire. Patients were asked to check in daily into the app as green (no symptoms), yellow (some symptoms) or red (bad symptoms). Patients were asked to perform spirometry using a connected spirometer. Remote monitoring protocols were set up for patients which included specific requirements for alerts being escalated to the pulmonologists. We monitored check-ins, alerts, and escalations during the study time window.

RESULTS: A total of 25 patients were included in this pilot. Mean age was 57 and majority (23) were female. A baseline questionnaire rating the app, indicated that ease of check-in and ease of modification to the patient's asthma plan were the two highest rated features. 2066 total check ins (1550 green, 506 yellow and 10 red checkins) and 1155 spirometry sessions were recorded during this period. 484 alerts were recorded and evaluated by the monitoring team, of which 37% required an escalation to the physician requiring an intervention which included transfer to a medical facility, change in respiratory medication or further education.

CONCLUSIONS: Patient driven engagement along with a well executed RPM program leads to increased compliance and improved outcomes among patients with respiratory illnesses.

CLINICAL IMPLICATIONS: Our findings demonstrate preliminary evidence of the clinical impact of respiratory focused remote monitoring combined with a process for triaging our pulmonary patients. Adoption by pulmonolgists and allergists of these digital remote programs can pave the way for reduced physican burden, improved outcomes and reduced costs.

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