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Electronic alert may help reduce excessive prescribing of short-acting asthma inhalers

A study presented at the virtual 2020 European Respiratory Society (ERS) International Congress [1] has demonstrated that "an automatic, electronic alert on general practitioners' (GPs) computer screens can help prevent excessive prescribing of short-acting beta$_2$-agonist (SABA) inhalers," according to a news article on the ERS website [2]. While such inhalers can provide short-term relief of asthma symptoms, they are not designed to address asthma's underlying cause.

The article explained, "The alert pops up when GPs open medical records for a patient who has been issued three prescriptions for short-acting inhalers within a three-month period. It recommends the patient have an asthma review to assess symptoms and improve asthma control." Designed for computer systems that use EMIS (formerly Egton Medical Information Systems) clinical software, the alert was introduced in the United Kingdom in 2015. By 2017, it was in use by 56% of practices in England and almost all general practices in northeast London when the study was conducted [2].

"This research aimed to identify and target excessive SABA prescribing using an electronic alert in GPs' computer systems to identify at-risk patients, change prescribing behavior and improve asthma management," said the study leader, Dr. Shauna McKibben, an honorary research fellow at the Institute of Population Health Sciences, Queen Mary University of London (QMUL), UK, and clinical nurse specialist in asthma and allergy at the Imperial College Healthcare NHS Trust, London.

Methods

Data was studied from 132 general practices in northeast London (in the City and the boroughs of Hackney, Tower Hamlets and Newham) from 2015-2016 (i.e, cases) and 2013-2014, (i.e, controls, before the system was installed). Patients, male and female, aged 5-75 years, with asthma (identified by a coded diagnosis and one SABA prescription/12 months), who were prescribed 3 SABAs/90 days (which the researchers defined as "excessive prescribing") were included. SABA prescribing, asthma reviews and exacerbation data was extracted. Data was adjusted for age, gender and ethnicity. Subgroup analyses included prescription type and time point [1, 2].

Results

Healio [3] described the results as follows:

In total, 18,244 patients (mean age, 42.1 years; 55.2% female) with asthma were prescribed excessive SABAs, which the researchers defined as at least 3 SABAs within 90 days.

Twelve months after initiation of the automatic electronic alert, researchers observed a 6% reduction in repeat SABA prescriptions (adjusted odds ratio (aOR) = 0.938; $P < .001$). The alert led to a significant reduction in SABA prescriptions among patients who were Black (aOR = 0.964; $P < .001$) and South Asian (aOR = 0.972; $P < .001$). The researchers observed no effect on asthma exac-

erbations with the electronic alert (aOR = 0.988; *P* = .561).

Asthma reviews increased by 12% at 3 months after initiation of the automatic electronic alert (aOR = 1.12; *P* = .002) and repeat SABA prescribing decreased by 5% at 3 to 6 months (aOR = 0.95; *P* < .001), with an 8% reduction in asthma exacerbations (aOR = 0.92; *P* < .001). Repeat SABA prescribing decreased by 9% at 6 to 12 months after alert initiation (aOR = 0.91; *P* < .001).

Implications of the study

McKibben interpreted the results saying, "The most important finding is the small but potentially clinically significant reduction in SABA prescribing in the 12 months after the alert. This, combined with the other results, suggests that the alert prompts a review of patients who may have poor asthma control. An asthma review facilitates the assessment of SABA use and is an important opportunity to improve asthma management."

She noted a study limitation, in that the alert assumed only one SABA inhaler was issued per prescription, when often two inhalers may have been issued at the same time. "Therefore, excessive SABA prescribing and the subsequent reduction in prescribing following the alert may be underestimated."

During the study, a sample of GPs, receptionists and nurses in general practice were asked about their thoughts on the alert. "The alert was viewed as a catalyst for asthma review; however, the provision of timely review was challenging and response to the alert was dependent on local practice resources and clinical priorities," said McKibben.

The ERS article also quoted Daiana Stolz, European Respiratory Society Education Council Chair and Professor of Respiratory Medicine and a physician at the University Hospital Basel, Switzerland, who was not involved in the research. "This study shows how a relatively simple intervention, an electronic alert popping up on GPs' computers when they open a patient's records, can prompt a review of asthma medication and can lead to a reduction in excessive prescribing of short-acting asthma relievers and better asthma control," she commented. "However, the fact that general practices often struggled to provide a timely asthma review in a period before the COVID-19 pandemic, suggests that far more resources need to be made available to primary care, particularly in this pandemic period."

Further research and applications

"Excessive SABA use is only one indicator for poor asthma control but the risks are not well understood by patients and are often overlooked by healthcare professionals," added McKibben. "Further research into the development and robust evaluation of tools to support primary care staff in the management of people with asthma is essential to improve asthma control and reduce hospital admissions."

According to the ERS article, "the study's findings are now being used to support and inform the REAL-HEALTH Respiratory initiative, a Barts Charity-funded, three-year program, with the clinical effectiveness group at QMUL. The initiative provides general practices with EMIS IT tools to support the identification of patients with high-risk asthma. This includes an electronic alert for excessive SABA prescribing and an asthma prescribing tool to identify patients with poor asthma control who may be at risk of hospital admission."

References

Content for this article was based on and excerpted from:

1. McKibben Shauna, Bush Andy, Thomas Mike and Griffiths Chris. An electronic alert to reduce excessive prescribing of short-acting beta$_2$-agonists for people with asthma in East London: A retrospective case-control study using routine primary care data. European Respiratory Journal. 2020. 56: 1364. DOI: 10.1183/13993003.congress-2020.1364. https://erj.ersjournals.com/content/56/suppl_64/1364.

2. Electronic alert reduces excessive prescribing of short-acting asthma relievers. European Respiratory Society. August 24, 2020. https://www.ersnet.org/the-society/news/electronic-alert-reduces-excessive-prescribing-of-short-acting-asthma-relievers.

3. Electronic alert may reduce excessive prescribing of short-acting asthma relievers. Healio. September 10, 2020. https://www.healio.com/news/pulmonology/20200910/electronic-alert-may-reduce-excessive-prescribing-of-shortacting-asthma-relievers.