Reducing hospital admissions for asthmatics

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Children with moderate or severe asthma attacks who are treated with systemic corticosteroids during the first 75 minutes of triage in the Emergency Department (ED) were 16% less likely to be admitted to hospital. This highlights the importance of adopting a strategy to rapidly identify and begin treating children with moderate or severe asthma attacks directly after triage, according to a team of investigators working at the Sainte-Justine University Hospital Center (UHC), the University of Montreal, McGill University and the Research Institute of the McGill University Health Centre (RI MUHC).

"We knew that corticosteroids could help avoid hospital admissions and relapses. However, just how delays between ED admission and administration of the treatment impacted outcomes remained unclear", says Dr. Sanjit K. Bhogal, the lead author of a new study published in Annals of Emergency Medicine and graduate of the Department of Epidemiology, Biostatistics and Occupational Health at McGill.

"Our study demonstrates that, to be effective in preventing hospital admission, treatment with corticosteroids should be administered within 75 minutes of triage, regardless of patient age," says the senior author Dr. Francine Ducharme, who supervised the study while she was a McGill and RI MUHC researcher based at the Montreal Children's Hospital.

According to Dr. Ducharme, now pediatrician and researcher at Sainte-Justine UHC, "in fact, the earlier the treatment is given within this time frame, the more effective it is, hence the advantage of starting treatment

right after triage. Furthermore, beginning early treatment reduces ED stay by almost 45 minutes for patients who will be discharged from the ED."

The challenge now is to ensure that the severity of the asthma attack is flagged at the triage stage in order to initiate treatment immediately. In fact, it seems that patients who are treated "too late" were due, for the most part, to not been given high triage priorities or to physicians not being able to assess them early enough. ED congestion did not significantly impact on the time frame for administering corticosteroids.

"Given the findings of the study, the need to implement a nursing strategy that involves identifying the severity of the child's condition and beginning treatment as soon as a patient arrives in the ED, seemed obvious", said Dr. Ducharme, who is also clinical epidemiologist at the Sainte-Justine UHC, where the study data were compiled and analyzed. Dr. Ducharme also holds the Academic Chair in Clinical Research and Knowledge Transfer in Childhood Asthma at the Sainte-Justine UHC Research Center and is a full professor in the Faculty of Medicine of the University of Montreal.

The pediatric respiratory assessment measure (PRAM) scale, developed by Dr. Ducharme's team, was used to identify the degree of severity of the asthma attack and to rapidly initiate the severity-specific treatment recommended by asthma guidelines. At the Sainte-Justine UHC, Dr. Ducharme' s team has now develop a teaching module that will allow training of the triage nurses, ED physicians, and respiratory therapists to implement severity-specific guidelines and, whenever possible, to avoid patients being admitted to hospital.

The educational module will be available online by the end of 2012 on the University of Montreal's website. It is eagerly awaited by health institutions in Ontario and Alberta, as well as in several institutions in the

US, which have decided to adopt the proposed treatment protocol based on the PRAM scale and who wish to receive training. The tool is an offspring of the integration of research, education and health care. As such, it will make it possible to transfer the knowledge acquired through the study to the EDs around the world, for the direct benefit of patients and their families.

More information: The article Early Administration of Systemic Corticosteriods Reduces Hospital Admission Rates for Children With Moderate and Severe Asthma Exacerbation appeared in the March 10, 2012 online version of the journal *Annals of Emergency Medicine*.

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