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REFLECTION ON CLINICAL DECISION SCIENCE:

When rationing becomes part of clinical decision-making

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The article 'Compared to maximal current management standards, oscillating positive expiratory pressure devices have not been shown to improve clinically relevant outcomes in COPD patients with acute exacerbation,"[1] has new significance in our current clinical lives. There are similarities between the patient described and a patient on our service whom we recently provided with a flutter valve to clear secretions from a mucous plug in the setting of an acute COPD exacerbation. Our patient experienced an adverse outcome from its use (choking with oxygen desaturation), which led us to ask: Why do flutter valves continue to be recommended without data demonstrating effectiveness? We agree strongly that the author's focus on indication creep holds merit when considering evidence-based treatments to use for patients.

Our patient was a 63-year-old male with a past medical history significant for stage IV metastatic adenocarcinoma of the small bowel with peritoneal carcinomatosis, HFpEF, seizures, depression, cachexia and COPD who was admitted to our acute care hospital from home for a COPD exacerbation with copious mucus production. During his hospital stay, he was given a flutter valve to aid in dislodging sputum. The patient was told that it would help make his secretions easier to expectorate and that there would be no harm in using the equipment for this purpose.

Through consulting the available research literature, we confirmed flutter valves have proven effective in the realm of secretion clearance in bronchiectasis;[2] however, minimal evidence exists for clinically significant sputum clearance that decreases the length of hospital stay or duration of symptoms in a COPD exacerbation.[3]

The patient at our hospital and the patient described in the cited publication both were offered flutter valve' bedside by respiratory therapy in hopes that mechanical oscillatory pressure could be applied to dislodge sputum from their lungs despite lack of evidence that patients with COPD exacerbations benefit from this intervention.

Why does the flutter valve continue to be recommended for COPD exacerbations in the face of minimal effectiveness data? We would be remiss if we did not acknowledge two major factors playing into this decision: bulk pricing and the illusion that these devices have no harm associated to them, and so must be better than conservative treatments.

According to our attending physician who contacted the manufacturer of the flutter valves used in our hospital, individual doctor practices are unable to independently purchase or be quoted a price for office use devices because the manufacturer practices institutional pricing, which offers discounts based on volume. This scenario seems to reinforce the concept of indication creep, where the consumer (in this case, our hospital) saves money by purchasing these products in bulk and, in turn, must find a use for the equipment in the hospital. These institutional factors are part of the social context in which decisions must be made. In this case, our patient had an adverse event because of device manufacturer salesmanship.

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As for harms inflicted on our patient, he experienced emesis and desaturations following flutter valve use, likely due to a combination of positive airway pressure entering his stomach in addition to secretions being mobilized and trapped in his airways. We discontinued his flutter valve after evaluating the patient. In this scenario, the patient was placed at risk of aspiration of gastric contents from the use of this device. Therefore, as a cautionary tale, it is prudent for providers to question the utility of items that have minimal evidence of therapeutic value. Simply adding an item because it is in the hospital and is perceived to be benign by some members of the healthcare team may require further thought. We must challenge the shotgun approach to medicine, which assumes that more treatment options for a patient are equivalent to better clinical outcomes.

Challenging these assumptions is not easy. One of our experienced and respected colleagues said, “Even if they don’t work, I’m going to keep prescribing them because they can’t do any harm.” This colleague expressed what is called a cognitive heuristic—a way of thinking. Doctors use heuristics while making clinical decisions all the time. Heuristics are not necessarily logical. Our experience showed us that experienced clinicians with higher social status are rarely questioned.

But now is the time we need to summon courage to have these conversations. Our patient had his complication on Monday and by Friday of the same week, the hospital was overwhelmed with COVID-19 patients and the topic of rationing was bantered around throughout media and doctors’ conversations. Even in normal times, Accountable Care Organizations are designed to shift resources to therapies that have a positive impact on health.

We can no longer afford therapies without proven benefit. We might have to decide to advocate within our institution to stop purchasing these devices, for if we have them, they will be used. This example illustrates Clinical Decision Science. It demonstrates the intersection of clinical research, caring for patients, and the concept that doctors “can’t fight City Hall,” an idiom which dictionary.com defines as, “Unable to overcome bureaucratic rules,…This term transfers the seat of city government to a more general sense of bureaucracy in any sphere. [Mid-1800’s].”[4] If doctors abdicate their responsibility to administrators, our patients suffer.

We implore healthcare providers to avoid the temptation of indication creep and to question the addition of therapeutic modalities that either have minimal proven benefit or perhaps even hidden harms. The monetary expense to the hospital should not be overlooked either. Having ineffective supplies present in the hospital encourages indication creep in those who believe in a given product’s harmlessness or are unaware of the minimal benefit they do provide. Therefore, health care providers and hospitals must work together to eliminate the purchasing of such supplies and divert the money to better, more evidence-based therapies.

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