Predicting Outcomes in Older Medical ICU Survivors

Adults over the age of 65 now comprise almost half of all intensive care unit admissions in the United States. Receiving more intensive treatment than in years past, they often survive what were previously fatal critical illnesses. However, among the some 125,000 older adults who require mechanical ventilation and survive to hospital discharge annually in the country, almost half are re-hospitalized and 30 to 65 percent die within six months.

“These data demonstrate an urgent need to risk stratify and identify older ICU survivors for interventions aimed at improving their functional dependency, mortality, and/or quality of life after they are discharged,” says Matthew R. Baldwin, MD, MS, pulmonologist on the Critical Care Service in the Division of Pulmonary, Allergy, and Critical Care Medicine at NewYork-Presbyterian/ Columbia University Medical Center. Dr. Baldwin recently served as lead investigator on a study to determine whether frailty can be measured within four days prior to hospital discharge in older ICU (continued on page 3)
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robbled? Do you feel safe going out?’ And then I will slowly move to questions of, ‘Is your son or daughter ever rough with you? Have you been made to wait for food, medicines, or care? Have you ever been hit, slapped, or punched?’ Quite often the answer is no. But if you see 15 or 20 patients over the age of 60, you will have encountered an elder abuse victim – and most internists and family doctors see that number or more in a day. It’s out there, and so the opportunities to detect and meaningfully intervene are there.”

According to Dr. Lachs, the single most common subtype of abuse is financial exploitation. In an economic downturn, he notes, Social Security checks and carefully tended nest eggs can be especially tempting. “Older adults often have significant financial resources that are the target of misuse, if not by family members then by unscrupulous people trying to sell financial services or rip them off with home improvements or investment scams,” Dr. Lachs says. “The government has become more interested in this recently because older adults who are essentially impoverished by this become wards of the state in some form. Elder abuse, for example, is a major risk factor for entering a nursing home, and the federal government is the major payor for nursing home care.”

“Older people who are victims may be isolated in such a way that they see nobody in the course of a calendar year other than their primary care physician and the abuser. So I teach residents and medical students that the once-a-year blood pressure visit and physical exam may be the only opportunity to detect mistreatment.”

— Dr. Mark S. Lachs

The past decade has also seen an explosion of interest in bench-to-bedside investigations. For example, Dr. Lachs’s observations as a nursing home physician inspired a study of resident-to-resident abuse in nursing homes; he found that 2.4 percent of residents had been the self-reported victims of physical violence and 7.3 percent had experienced verbal aggression – just in the previous two weeks.

Dr. Lachs’s and Dr. Pillemer’s collaboration began as the field of elder abuse research was starting to come into its own. Dr. Pillemer notes that just as the ’60s saw shifts in understanding about child abuse, and the ’70s about spousal violence, the ’80s saw the beginnings of widespread awareness about abuse of the elderly. And while there are commonalities with other forms of domestic violence, elder abuse can be especially thorny to uncover. “Older people who are victims may be isolated in such a way that they see nobody in the course of a calendar year other than their primary care physician and the abuser,” says Dr. Lachs. “So I teach residents and medical students that the once-a-year blood pressure visit and physical exam may be the only opportunity to detect mistreatment.”

Then, as Dr. Lachs notes, “You have the additional complexity that the caregiver is often the abuser” – the very person accompanying the victim to the doctor’s office.

Dr. Adelman recalls a long-ago case that taught him the importance of giving elderly patients the chance to speak candidly. “Every time I would see the woman as an outpatient, her daughter was present,” he says. “She’d been admitted to the hospital and as I was making rounds she said, ‘Doctor, I must speak to you alone. Every time you saw me, my daughter was in the room and I couldn’t tell you what was going on. My adolescent grandchildren are stealing my money, and I couldn’t buy my medicines. That’s why I ended up in the hospital.’ I learned that every time you see a patient, you need to see them alone. It may be just during the physical exam. If a family member doesn’t want to leave, why is that? Are they trying to hide something? Or if you want to send help into the home, like a visiting nurse, and they won’t accept it, what’s going on there? You always must have time for privacy.”

In 2009, Weill Cornell Medical College teamed up with more than 25 government, academic, and nonprofit organizations to launch the New York City Elder Abuse Center, which is dedicated to treating and preventing elder abuse in the city and beyond, with Weill Cornell faculty in key roles. They include Dr. Lachs, Medical Director, as well as Risa Breckman, LCSW, Executive Director, and geriatrician Veronica E. LoFaso, MD.

The New York City Elder Abuse Center participated in a statewide elder abuse prevalence study entitled “Under the Radar” because it demonstrated that for each case of elder abuse that comes to professional attention, 25 more go unreported and undetected. The reasons why so few come to light range from victim isolation to cognitive impairment to the fear that any intervention will lead to placement in a nursing home. Another all-too-common reason: shame. “It’s hard to think of a greater parenting failure,” Dr. Pillemer observes, “than your son or daughter beating you up.”

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survivors of respiratory failure and whether it is associated with post-discharge disability and mortality. This study was funded by a new investigator pilot award from the National Institute on Aging and the Weill Cornell-based Translational Research Institute for Pain in Later Life (TRIPLL).

Frailty as a syndrome has been defined by Linda P. Fried, MD, MPH, Senior Vice President of Columbia University Medical Center and Dean of Columbia University Mailman School of Public Health. In her research in a community dwelling population, Dr. Fried found that frailty is a predictor of adverse outcomes. This construct has been applied to patients in the hospital, but it had not been tested in the ICU setting.

“Physical frailty is a measurable clinical phenotype of increased vulnerability for developing adverse outcomes, such as disability and/or mortality, when exposed to a stressor,” explains Thuy-Tien L. Dam, MD, Division of Geriatric Medicine and Aging at NewYork-Presbyterian/The Allen Hospital and NewYork-Presbyterian/Columbia University Medical Center, and one of the study’s co-authors.

“Studies of older ICU survivors of mechanical ventilation have shown that many of these patients develop new deficits or increase the magnitude of pre-existing deficits associated with the frailty syndrome while critically ill,” says Dr. Baldwin. “These deficits, which may include malnutrition, weight loss, muscle wasting, and weakness, often persist after the critical illness resolves.”

The overall hypothesis of Dr. Baldwin’s research is that the outcomes of critical illness in older adults could be dramatically improved by understanding the determinants of those outcomes as well as the palliative care needs and treatment preferences of patients, and then by designing interventions based on that understanding during the post-ICU care period. “Since all these deficits are parts of the vicious cycle of frailty, measuring these frailty components in older ICU survivors may help risk-stratify and identify them for rehabilitative, therapeutic, or palliative interventions after an ICU stay,” says Dr. Baldwin.

In their investigation, Dr. Baldwin and his colleagues undertook a single-center prospective cohort pilot study of 22 medical ICU survivors age 65 years or older who had received noninvasive or invasive mechanical ventilation for at least 24 hours. “Our aim was to test the primary hypothesis that Fried’s frailty components could be measured in older ICU survivors of respiratory failure just prior to hospital discharge,” says Dr. Baldwin.

The researchers adhered to Dr. Fried’s widely adopted measures of physical frailty based upon five possible components – weight loss, weakness, slowness, reduced physical activity, and exhaustion. “The primary outcome was six-month mortality after the date of hospital discharge, and the secondary outcomes were disability related to dependency in activities of daily living – both those that existed previously and those that followed after hospitalization.”

The investigators concluded that Fried’s frailty components can be measured in older ICU survivors of respiratory failure and that higher frailty scores at hospital discharge appear associated with higher risks of one-month disability and six-month mortality. “In this context, Fried’s frailty may represent a composite measure of an older ICU survivor’s physiologic reserve that is affected by pre-hospitalization health and disability, and the severity and duration of critical illness that he or she just survived,” says Dr. Baldwin.

Having critical information about a patient’s function and frailty status before coming into the ICU can well play a key role in knowing how the patient will fare following discharge and their chances of survival.

“Geriatricians know that a major component of how well someone does in the ICU depends on how well they were before they came in. If they were robust, active, and functioning well, they might have the reserve to bounce back,” says Dr. Dam. “We also look at the trajectory of the patient’s progress. If you have someone who is declining quickly in the hospital, the likelihood of getting better after the ICU is much lower. And a patient admitted with an acute issue, such as a urinary tract infection or pneumonia, is more likely to do better than the person who has been declining over time prior to hospitalization. This may indicate that instead of doing everything in the ICU for this patient, perhaps you have goals of care discussions with the family about likelihood of recovery. It is a tough balance to want families to be realistic and yet for them to remain hopeful. It is even tougher when you don’t have data or evidence to support your discussion and decisions that need to be made.”

“This study has shown that if you were frail going into the ICU and coming out of the ICU, the likelihood of recovery is very low and actually the rate of mortality is very high,” adds Dr. Baldwin. “Using this evidence to start honest discussions with families will be helpful because you can provide them with data that helps support the future care decisions.”

Reference Article

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In their report, the researchers chronicled patterns of abuse, noting that overall, spouses or partners and adult children were responsible for 40 percent of the mistreatment reported in the survey. Spouses or partners were most often cited as the perpetrators of physical and emotional abuse; financial exploitation was most often attributed to adult children, grandchildren, other relatives, friends, or home health aides. Of those who were abused, just over a quarter cited more than one perpetrator.

“Abuse occurs concurrently,” Dr. Lachs says. “It’s uncommon to see someone who was physically abused who’s not also verbally abused, neglected, and financially exploited. There’s a great deal of overlap.”

The findings underscore the complex, multifactorial nature of elder abuse — and the magnitude of the problem that Dr. Lachs and Dr. Pillmer have spent a combined half-century trying to understand. “Theirs has been an incredibly complementary, deep, and abiding collaboration,” Dr. Adelman says. “Their work has brought a lot of clarity to a field that desperately needed it.”

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