

EDITORIAL

Patient 4.0 – The challenge of care for elderly patients

Paciente 4.0 – O desafio do cuidado aos pacientes muito idosos



The term “very old” or “oldest old” defines patients over 80 years of age, and the age group has been called the “fourth age”.¹ It is estimated that over 20% of the world population will be 60 years old and over by the year 2050,² therefore the very old population tends to grow. In developing countries, the number of elderly individuals is expected to surpass the figures of the young population in 20 years’ time.

Simultaneous to population aging, the world is experiencing a time of great technological development, healthcare included. In addition to new equipment and drugs, concepts such as data analytics and internet of things integrate different approaches and technological progress.³ The acronym VUCA (volatility, uncertainty, complexity and ambiguity), initially used by the American Armed Forces after the September 11, 2001 attack, defines a world in ongoing change. The term also can be used for healthcare and indicates the need to better understand the new demographics of patients who need surgical-anesthetic care using new technological resources.

The nosological distinction between frail and old, incapacity and disease is important not only to medicine, but also for reviewing the concept of aging and the so-called “fourth age”,² that here we are naming patients 4.0. These patients, bring new challenges to their care, in a completely connected world that allows us to better understand challenges, as for example in the case of the very old. There are, however, few studies exploring this surgical population. Lees et al showed that in 65 to 80-year-old patients, chronological age alone or the number of co-morbidities did not correspond directly to mortality.⁴

Half of surgical procedures are estimated to be performed on elderly patients⁵ and a major portion of medical expenditures are spent during the final years of life of the elderly, particularly when a surgical procedure is required. This probably reflects the prevalence of cardiovascular dis-

eases and cancer, associated with the need for diagnostic procedures, major surgeries, and intensive and palliative care.

Elderly individuals have specificities related to the aging process and reduction in the functional reserves of several organs. Forty-one percent of hospital costs are estimated to be due to patients over 65.⁵ Perioperative care to the very old requires knowledge of the physiological changes related to the aging process and their implications, as does the choice of technique and the parsimonious use of opioids and anesthetic inhalation agents. The type of anesthesia and surgery, procedure duration, need for post-operative intensive care, the occurrence of *delirium* -one of the main complications observed in the immediate post-operative period, related to patient demographics, such the number of years of schooling and alcoholism,⁶ hemodynamic complications and renal failure are major indicators of outcome in this population.

In this issue of **BJAN**, Silva D et al.⁷ discuss the relationship between the different age groups and functional status, and surgical results in elderly patients, showing that worse outcomes above 85 years of age can reflect greater vulnerability of the group to postoperative complications, possibly related to multiple comorbidities and decreased physiological reserves. As the very old population has increasingly grown and requires surgical procedures and post-operative intensive care, a critical issue to be considered and studied better is the difference between chronological and physiological age. The authors highlighted the need to include this assessment into score systems to predict severity.

Moreover, controversy on performing a surgical procedure or not on very old patients is frequent. When considering indication for surgery one should not only assess the treatment itself and gain in longevity, but also the risk of complications and worsening of quality of life.² It is important for the procedure to target extending lifetime with

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quality.⁸ Knowing this population better, from the main risk factors to the most frequent complications in the postoperative enables prompt, customized interventions, helping to improve results and even possible cuts in costs. We are experiencing a new phase, with a new patient profile and new challenges, and acknowledging this new scenario is the first step toward being able to, with the help of technology, plan guided interventions focused on improving outcomes.

Conflicts of interest

The authors declare no conflicts of interest.

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