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The Oldest Old in Internal Medicine Wards: Can Prognostic Predictors be used for Making Clinical Decisions?

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In Israel, as in the rest of the world, the elderly population is getting older. In 2007, 27% of all those aged 65 years and above were 80 years of age or older. The older old population has a higher rate of utilization of hospital days, and although the ≥ 75 year old population comprises only 5% of those aged ≥ 65, their proportion in hospital days is as high as 20%, mostly in internal medicine departments [1]. Sonnenblick et al. [2], in a survey describing the demographic characteristics of hospitalized patients in internal medicine departments in Israel, showed that 75% of the patients were over the age of 65, and a quarter were among the oldest old (85 and over).

Two aspects relate to the impact of the aging of the internal medicine wards. One was addressed by Shoenfeld in several articles. Due to the aging of the population, there are more dependent patients in the internal medicine wards and they have less "interesting" and "intriguing" problems. The internal wards have to deal with the "old lady in the corridor," while the physicians are not qualified to identify her medical and paramedical problems, which require considerable investment of time [3-5]. Raveh and co-authors [6] point out that geriatric patients have more underlying chronic diseases, that a smaller proportion of the patients' myriad problems are solvable, and that there is less opportunity for a meaningful contact with these patients. The combination of these factors may lead to diminished satisfaction among residents, who are interested in internal medicine and not in geriatrics, and cause early physician burnout. Fewer physicians are inclined to specialize in internal medicine, with the result that manpower requirements in this field are not met.

The second impact of the aging hospitalized population is on the patients themselves and their treatment. These patients have unique presentations of clinical syndromes or even simple diseases. Are the physicians who are treating them adequately qualified to give them the best treatment? At present, most of the teaching programs in medical schools or during specialization in general internal medicine are minimal with respect to geriatric education. There is an urgent need to enrich the professional capabilities of those who treat old-old patients. Some ideas to improve the medical geriatric services to the old, and to old-old hospitalized sick people were suggested by Sonnenblick [7] and Berner [8]. One possibility is to hospitalize all old patients in acute geriatric departments where the staff has specific geriatric training and specialization. An alternative suggestion is to implant in the staff of all medical wards at least one geriatrics-specialized senior physician who will be involved in geriatric care and education. A third solution to the problem is to transfer most elderly patients to acute or sub-acute geriatric departments in geriatric medical centers soon after they have been evaluated in the emergency department. One wonders whether an emergency room for these patients should be initially in a geriatric hospital, or, if in a general hospital, at least staffed by a geriatrics expert. Implementation of these programs first requires a change in the public attitude to geriatrics as a concept of treatment, together with improvement in the quality and resources of the geriatric hospitals. Each of the above solutions has its advantages, limitations and difficulties.

In order to maintain sufficient acute and sub-acute geriatric departments, serious consideration must be given to the dearth of geriatricians, which is currently a worldwide problem and will almost certainly increase in the future [9-11]. The American Geriatrics Society predicts that by 2030, when there could be nearly 80 million people over 65, the United States will need roughly 26,000 more geriatricians than are likely to be available [10]. Press and Clarfield [9] calculated that by 2020 Israel will need 854 geriatric physicians. At present there are about 250 specialist geriatricians, and each year only some 25 residents fulfill the requirements for certification. This calculation, as stated by the authors, was an underestimation, as it took into account only the need for physicians working in the academic field or in geriatric consultation and not the need for geriatricians in primary care, in nursing homes and in the community.

Many reasons have been proposed to explain the manpower shortage. In addition to the lack of satisfaction – mentioned above by Shoenfeld and associates [3-5] and Raveh [6] – for the

internal medicine residents, attributed to the "geriatization" of those wards, there is a low professional image of the geriatrician. A third of the residents specializing in geriatrics in the U.S. were former immigrants to Israel [12]. In Israel, most of the physicians in geriatrics are immigrants from the former Soviet Union; the majority of them had a completely different specialization before they came to Israel, and many of them did not select geriatrics as their first choice. Many are excellent geriatricians, but a significant number of them are unable to fulfill the requirements of the Scientific Council for acquisition of geriatric specialization. In any case, the large wave of immigration from the former Soviet Union has dwindled to a trickle, and the number of physicians turning to geriatrics is now very low. Unless some major change occurs, catastrophe is around the corner. National programs have to be developed urgently to face these needs.

An unresolved dilemma in the care of patients at the end of life is the question of futile treatment. Every physician would like to know what the outcome will be of his or her treatment of each patient, and to carry out specific treatment policy and management accordingly. This will help to determine where to provide treatment for acute or subacute medical conditions for the old-old patient. Should they be treated in a maximally equipped general hospital with highly qualified geriatric staff, or should they be treated by highly qualified geriatric staff in a geriatric hospital with limited sophisticated technologies, but uncompromising tender palliative geriatric care? Assuming the appropriate conditions are achieved, there will still be two obstacles to overcome: public and family opinion regarding the treatment given in the less sophisticated place of care, and the decision as to which patient will better utilize each facility.

Zafrir and colleagues [13], in a study published in the present issue of *IMAJ*, attempted to determine the prognostic factors for in-hospital and out-hospital mortality of acutely hospitalized nonagenarians. The data show that in spite of their advanced age, half of the oldest-old hospitalized population come from their own homes, and almost half are independent and have normal cognitive function. The significant predictors for in-hospital death of nonagenarians were pressure sores, older age, atrial fibrillation, malignant disease, and admission for an acute infection – especially *Clostridium difficile*-associated diseases. In addition, mental decline, permanent urinary catheter, leukocytosis, renal failure and hypoalbuminemia predicted post-discharge mortality. Admission due to an infectious disease, but not acute coronary syndrome, was significantly correlated with in-hospital and post-discharge mortality.

Few studies have investigated mortality predictors of the oldest old in different settings. The above-mentioned study of Sonnenblick et al. [2] showed an odds ratio of 8.5 for higher APACHE-II scores of those who died during hospitalization in an internal medicine department compared to the survivors. In the Danish 1905 Cohort Survey in the community of the oldest old, what predicted mortality was a high disability level, poor physical and cognitive performance, and self-rated health (women only), which indicates that mortality in the oldest old is not a stochastic process [14]. When hospitalized, in addition to their pre-admission functional and cognitive state, the severity of their condition at admission also predicts mortality. A study of patients > 80 years old in an intensive care unit showed that poorer short-term survival was influenced by pre-hospital function, co-morbid illness, surgical status, primary diagnosis, and illness severity [15]. Yust-Katz et al. [16] found that for patients aged ≥ 90 admitted to a non-acute geriatric hospital, the main prognostic factors for mortality and functional outcome were incontinence and functional state prior to admission.

All these mortality predictors, even when statistically significant, do not provide the expected precise tool to use as a guideline to help make the decision as to which patients should receive palliative care (due to the obvious end-stage medical situation), and which should be offered a maximal effort to overcome their acute condition with a reasonable chance of recovery. Zafrir's study was retrospective and calculated each prognostic feature separately. The APACHE-II score, or similar scores, which have been validated for patients admitted to a general medical ward, may provide a comprehensive predictor with regard to the overall condition of the patient [17]. Correlating predicted mortality with actual in-hospital mortality may give a cutoff point score that could help the physician make the necessary clinical decision.

A prospective study of this approach may provide us with a very important clinical instrument, although it will not address the ethical, religious and cultural aspects of the situation.

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