Identification and Treatment of Anaemia in Older Patients

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Summary

Anaemia in elderly patients should never be regarded as a normal physiological response to aging. Underlying causes must be investigated and treated in a similar manner to that used in younger adults. In addition to a thorough history and physical examination, basic investigations such as red cell indices and morphology, reticulocyte count, haematinic assays and occasionally bone marrow examination, will detect the underlying pathology in most cases.

Anaemia may be classified, according to red blood cell mean corpuscular volume, into microcytic, macrocytic and normocytic types. Anaemia with an absolute reticulocytosis is due either to acute blood loss or haemolysis. Other anaemias, more frequently encountered in elderly patients, are hypoproliferative, and reflect depressed marrow production or impaired erythroid maturation. Examples include anaemia of chronic disease and iron deficiency and, less commonly, megaloblastic anaemia and anaemia due to primary bone marrow failure.

The treatment of anaemia should aim to correct the underlying cause of the disorder and/or to improve the quality of the blood, e.g. by haematinic replacement therapy. Recombinant human erythropoietin has revolutionised the treatment of anaemia associated with chronic renal failure, while its role in other anaemias is currently under investigation. Regular blood transfusion may be required for some elderly patients with chronic anaemia. However, the attendant risks of this procedure, such as iron overload and viral hepatitis transmission, must be considered.
Anaemia is the most common haematological problem of older patients. The actual definition of an elderly population will depend both on the age distribution of the local population and the lower age limit used by the observers. As older patients comprise such a heterogeneous group, with an age span of over 30 years, the reported prevalence of anaemia in elderly patients is quite variable. However, a recent survey from the UK reported an overall prevalence of anaemia of 20.1% in elderly men and 13.7% in elderly women (Challand et al. 1990). The differential diagnosis, investigation and treatment of anaemia in the elderly are similar to that for younger adults.

The types and causes of anaemia differ in elderly compared with younger patients. Anaemia of chronic disease (Lee 1983) becomes the commonest cause of anaemia in the older age group, and reflects the increased incidence of chronic inflammation and malignancy in later years (Kirkeby et al. 1991). Iron deficiency is also commonly seen in the elderly, and warrants investigation for causes of blood loss. Many older patients live in poor socio-economic conditions or in institutional care and are at increased risk of anaemia due to dietary deficiency of iron, folate, protein or ascorbic acid. Malignant blood disorders with associated anaemia such as myelodysplasia and leukaemia (fig. 1), become more frequent with advancing age. Curative therapy for these disorders is often not possible. Pernicious anaemia, as with other autoimmune conditions, is also encountered more commonly in the elderly than in the younger population.

1. Normal Haemoglobin Levels in Elderly Patients

There has been some disagreement regarding the actual definition of anaemia in elderly patients (Kruger 1987). With advancing age, a progressive and apparently physiological reduction in the distribution and cellularity of marrow haematopoiesis occurs (Lipschitz et al. 1981). Kelly and Munan (1977) suggested that a gradual reduction in haemoglobin occurs from the sixth decade, especially in males, and becomes more rapid from age 70 years. As with other organ systems in elderly patients, the reduced reserve capacity of the haematopoietic system makes it more susceptible to systemic insults. As a result, anaemia is more likely to be observed in older patients.

In another study, low haemoglobin levels (using criteria for anaemia in younger patients) were detected in >25% of a group of more than 200 apparently healthy individuals over 65 years old (Lipschitz et al. 1981). Very few of the individuals had a specific cause detected for their anaemia. This suggests that falling haemoglobin levels may be a normal physiological response to aging, the so called ‘anaemia of senescence’. In contrast, other studies have demonstrated a high incidence of anaemia in elderly individuals, associated with treatable causes (Htoo et al. 1979; Milne & Williamson 1972).

According to general consensus, anaemia should not be regarded as a normal physiological event in the aging process. In practice, an older individual whose haemoglobin level falls below the normal range for the younger adult population (<13 g/dl in males and <11.5 g/dl in females) should be investigated for a treatable underlying cause of anaemia. An exception may be patients in their ninth decade or over, in whom a lower limit of 11 g/dl may be more appropriate. This is applicable in the absence of supportive evidence for pathology, either clinical or red blood cell indices, of specific disorders (Zaino 1981).