Factors influencing haemoglobin levels in chronic medicine users

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INTRODUCTION

Anaemia may be defined as a decrease in the number of red blood cells, haemoglobin, and haematocrit, below the reference ranges indicated for healthy individuals, of the same age, gender and race under similar environmental conditions[1]. It is the most commonly encountered haematological abnormality[2].

AIMS

To investigate the effect of chronic medication use against influential factors on haemoglobin levels within the Maltese population. These factors included chronic administration of several drugs, symptoms experienced, dietary and lifestyle factors and haematological profile.

METHOD

Step 1 •Patients were recruited according to a specified list of nine chronic medications that influence haemoglobin count

Step 2 •Initial contact was made by the pharmacist and follow up appointments set by the investigator

Step 3 •Blood levels were tested in the community pharmacy using the STAT Site® M^{Hgb} Haemoglobin Meter at two instances to determine any possible fluctuations in blood level over time (retest time average 1 year)

Step 4 •Patient dietary and lifestyle habits were compiled through data collection in the form of patient characteristics sheets

A cohort of 76 patients were recruited for the study (n=76):

- Patients above 18 years of age were selected irrespective of gender or whether they suffered any chronic conditions;
- Current medications included one or more of the following on a chronic basis: anticonvulsants, colchicine, gastric acid blocking agents (including proton pump inhibitors and histamine H_2 – receptor blockers), hydroxyurea, non-steroidal anti-inflammatories, oral contraceptives, purine antagonists (azathioprine), sulfasalazine and trimethoprim.

RESULTS

Out of the 76 patients tested, 55 were female and 21 were male. Lower than normal haemoglobin levels were obtained by 45.45% of females and 47.62% of males, with abnormalities observed primarily in those on proton pump inhibitors (n = 12) and the oral contraceptive pill (n = 15). A linear relationship existed within the male population (Figure 1); an increase in age reflected a decline in the haemoglobin level (p = 0.013). No such correlation was established within the female population. Furthermore, no associations could be made with other dietary and lifestyle factors included in the study.

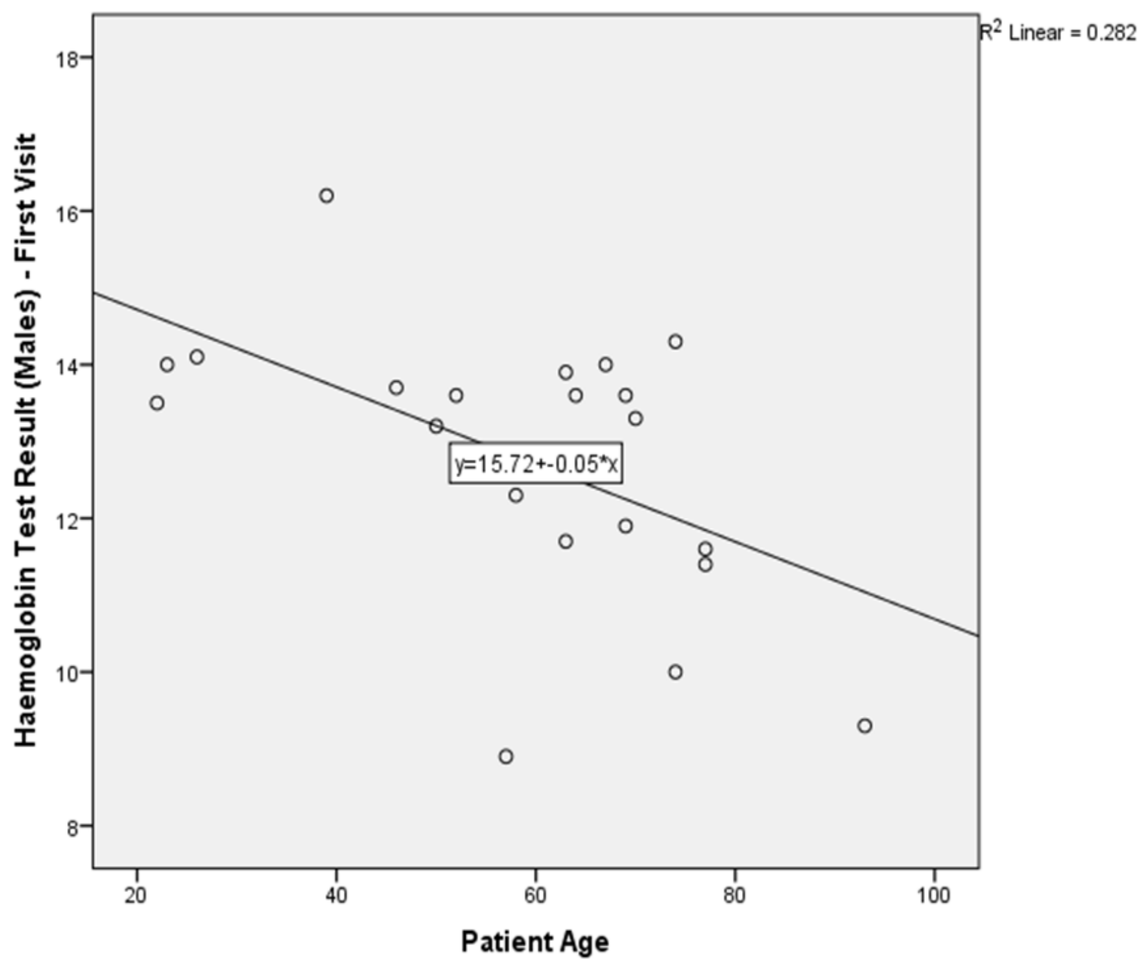

Figure 1. Scatter plot representing trend for decrease in haemoglobin with increase in age (Male population)

CONCLUSION

Wider education and information amongst health care professionals and patients on the availability of point of care tests, such as the STAT Site® MHgb Haemoglobin Meter is required[2]. Detailed patient history and understanding of lifestyle and dietary habits is fundamental for proper analysis of factors affecting haemoglobin levels.

References

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