

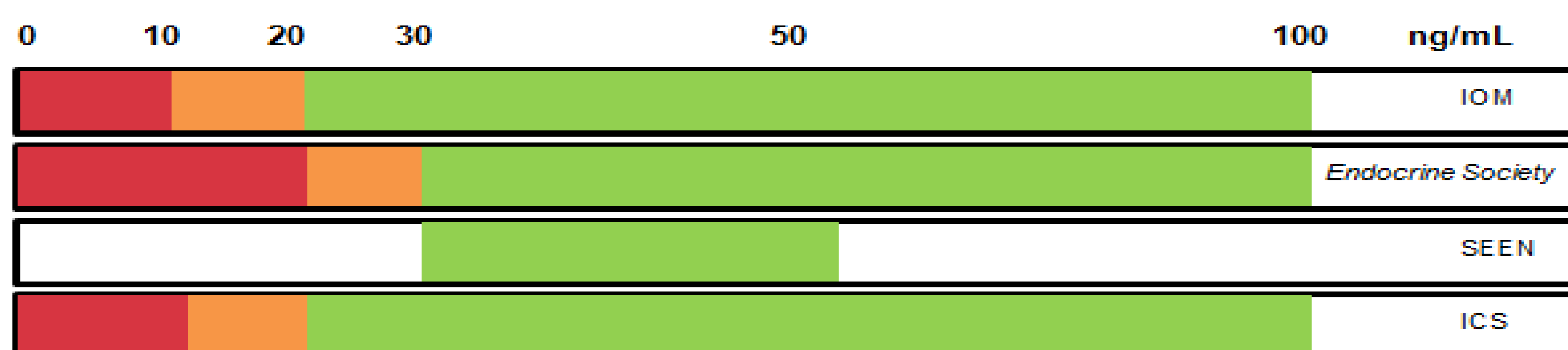
Introduction

Vitamin D sufficiency is related with extensive health benefits: optimal bone metabolism, cancer prevention, congenital defects, obesity, tuberculosis and other medical conditions.

There is no international consensus among scientific organizations regarding vitamin D status. The *Institute of Medicine* suggests a minimum of 20 ng/mL to certify sufficiency whereas the *European Society of Endocrinology* suggests 30 ng/mL (cut-off used in our laboratory).

The *Institut Català de la Salut* (ICS) has recently published (autumn 2018) a recommendation that suggests a minimum of 20 ng/mL to guarantee sufficiency.

Following the ICS recommendation, we aimed to evaluate the patients' reclassification on vitamin D status comparing the previous and the current cut-off levels for sufficiency (30 and 20 ng/mL, respectively) as well as its economic impact derived from vitamin D supplementation



Vitamin D status: red is deficiency, orange insufficiency and green sufficiency. SEEN : Spanish Society of Endocrinology and Nutrition

Materials and methods

Serum 25-hydroxyvitamin D (Liasion, DiaSorin, Stillwater, MN) was measured in 157 patients (years 2016-17) with calcium, phosphate and intact parathyrin within reference values (considered as the healthy cohort). Patients were classified using both cut-offs and statistical analysis was performed using the R code and a Chi square test. A p value of 0.00001 was considered statistically significant.

The economic impact derived from vitamin D supplementation was calculated considering an annual cost of 66 € per patient.

Results

A total of 100/157 (32.5%) patients were classified as sufficient following the new ICS recommendations whereas only 51/157 (53.5%) were classified as sufficient with the previous cut-off ($p < 0.00001$).

Due to the patients' reclassification, 49 patients per year will not be candidate to receive vitamin D supplementation in our laboratory influence area (400.000 inhabitants) which entails a saving of 3,234 €.

Vitamin D status	Deficiency	Insufficiency	Sufficiency
Cut off values → 30 and 10 ng/mL	N= 5 3,18 %	N= 101 64,33 %	N= 51 32,48 %
Cut off values → 20 and 12 ng/mL	N= 14 8,92 %	N= 43 27,39 %	N= 100 53,46 %

Patient classification (N= 157) depending on the different cut off values recommended for different scientific societies.

Conclusions

A 20% increase in patients classified as sufficient in vitamin D is observed with the new ICS recommendations in our healthy cohort. A positive economic impact is noticed and this should be considered keeping in mind that vitamin D deficiency could be overdiagnosed. Pharmacological safety and efficacy could be improved with the new recommendations since they classify patients more properly.