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Dear Readers,

in this edition we continue to discuss about possible extra-skeletal effects of vitamin D, in completely different areas: dermatological and neurological.

There are two inflammatory skin diseases, namely psoriasis and atopic dermatitis, in which the alteration of the skin barrier seems to play an important role in their pathogenesis. The author, starting from the observation that psoriasis improves with exposure to sunlight and that the skin, irradiated by the sun, synthesises vitamin D, had previously conducted investigations into psoriasis, showing that vitamin D, in addition to its known functions, plays a role in the expression of some of the proteins constituting the Tight junctions (TJs), fundamental structures of the 'barrier organ'. Atopic dermatitis also improves with exposure to sunlight, and exposure to artificial sources of UV radiation is considered among the possible treatments for this dermatosis. Various hypotheses have been put forward to explain this phenomenon: immunomodulatory action of UV rays inducing apoptosis of inflammatory cells, inhibiting Langerhans cells and modifying cytokine production, or direct action of UV rays reducing *Staphylococcus aureus* colonisation, but the effect of sunlight exposure on vitamin D synthesis could also be considered. In this edition, the author summarises the results of his recent work <sup>1</sup> that brings new evidence on the relationship between vitamin D receptor polymorphisms, TJ protein expression and certain clinical manifestations in adult atopic dermatitis patients.

Vitamin D is known to be important for maintaining muscle strength through its action on specific receptors in muscle tissue. Patients undergoing rehabilitation, especially in the neurological field and in both inpatient and outpatient setting, are a high-risk population prone to developing a vitamin D deficiency and manifesting the consequences of this condition. In the second article in this edition, studies on the effectiveness of vitamin D supplementation during rehabilitation after stroke are considered. The author concludes that currently, the results are contradictory but that the available research has many limitations, including above all, as is often the case in other fields of study, the small sample size, the insufficient length of the observation period or the lack of preliminary assessment of vitamin status for which it cannot be excluded that non-deficient patients were included. By summarising the methods investigated and the results available to date, the article provides useful information for planning supplementation in the rehabilitation pathway of patients with ischaemic stroke, although further research is required to implement this knowledge in clinical practice.

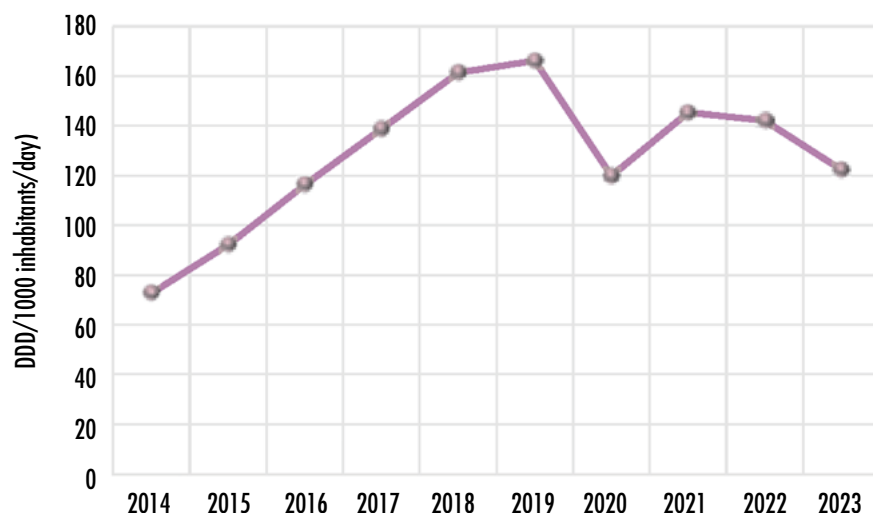
In the recent OsMed report for the year 2023 of the Italian Medicines Agency (AIFA) <sup>2</sup>, despite the prescription-based consumption [DDD/1000 inhabitants/day, Fig. (1)] and expenses of approximately 15% compared to the previous year, the expenses borne by the National Health Care Service for Vitamin D is of approximately EUR 200 million/year. It states that the data "confirm the use of cholecalciferol and metabolites for extra-skeletal indications for which RCTs have not provided evidence of efficacy". It also states that "the rich literature concerning the use of vitamin D in COVID-19 did not prove any benefit". For both of these statements, as can

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**FIGURE 1.**

Time trend 2014-2023 of vitamin D and analogs consumption (DDD/1000 inhabitants/day) (from AIFA, 2023, mod.)<sup>2</sup>.

be seen from the bibliographic selection in our journal, it seems to me that the literature on the subject is in fact at least contradictory. In the same report I invite you to notice

the curve in vitamin D consumption post note 96 in 2020, the first year of COVID-19, the recovery in the following years 2021 and 2022 and the subsequent decline in

the post-COVID year 2023 (Fig. 1). In the above-mentioned OsMed report, it is also stated that vitamin D ranks third among the class A therapeutic categories purchased privately by the citizen with additional expenses of 76 million euro (26% of the total expenditure), an increase over the previous year.

What do you think?

Enjoy reading... and a Happy New Year

### References

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- <sup>2</sup> Osservatorio Nazionale sull'impiego dei Medicinali. L'uso dei farmaci in Italia. Rapporto Nazionale Anno 2023. Roma: Agenzia Italiana del Farmaco 2024. <https://www.aifa.gov.it/-/aifa-pubblica-il-rapporto-osmed-2023-l-uso-dei-farmaci-in-italia->