

LETTER

# Th17 mediators and vitamin D status in influenza A (H1N1)

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See related research by Bermejo-Martin *et al.*, <http://ccforum.com/content/13/6/R201> and related letter by Krstić, <http://ccforum.com/content/14/2/410>

Regarding Bermejo-Martin and colleagues' article [1] and my comments [2], the authors concluded in their response that 'vitamin D should thus be considered in the context of a wider spectrum of factors influencing severe disease.' Although this is a reasonable proposal, it should be emphasized that vitamin D has been recognized as an important immuno-modulating factor [3], and studies show that both obesity [4] and seasonal sunlight deprivation [5] play important roles in the severity of influenza, not just in the western countries, where obesity is widely present, but worldwide. Overall better living conditions coupled with a disproportionately better health-care system could explain the absence of a significantly higher incidence of obesity-related critically ill H1N1 patients in the western versus the developing countries.

Regarding the exposure to sunlight, which is well correlated with vitamin D synthesis in the skin, there is a variation throughout the world largely due to differences in the geographical latitude. Populations have adapted to the regional intensity of the solar irradiation in different latitudes through evolutionary changes in skin pigmentation [6]. Hence, when compared to the natives of higher latitudes, people in the tropical regions may require longer periods of a direct skin exposure to intense sunlight to generate physiologically required quantities of vitamin D. The problem of insufficient-solar-irradiation-related vitamin D deficiency becomes prominent particularly in darker-skinned migrant populations when they move to higher latitudes [7,8]. This could be translated into a higher risk of developing severe illness if exposed

and infected by an influenza virus, which should be taken into consideration when treating critically ill patients.

#### Competing interests

The author declares that he has no competing interests.

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