



Non-transfusion-dependent thalassemia in Italy: less blues, no role of reds

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Dear Editor,

We read with great interest the letter by Mihailescu [1] that highlighted a high prevalence of depression (43%) among 32 Lebanese young adults with non-transfusion-dependent thalassemia (NTDT). They reported a straightforward association between Beck Depression Inventory (BDI) scores and hemoglobin levels, thus motivating the inclusion of depression assessment in the monitoring of new drugs for reducing anemia in NTDT patients. As we recently reported no significantly increased depression or anxiety in 23 NTDT patients evaluated with a different test [2], we investigated a larger sample of patients, including other centers in our country, with the BDI, the test used by Mihailescu. The aim was to verify whether our findings were due to sample size or test differences, or if there

are differences among NTDT populations that would challenge the generalization of their assumption. Scores ≥ 10 at BDI were suggestive of mild to severe depression [3]; clinically meaningful depression was defined by scores ≥ 16 [4]. The State-Trait Anxiety Inventory (STAI, composed by STAI-Y1, anxiety-state, and STAI Y2, anxiety-trait) was also administered; 40 was the cut-off for clinically meaningful anxiety [5]. Demographics and main clinical data were collected from clinical charts. Data were acquired between February and July 2020. The study was approved by the local Ethical Committee and informed consent was obtained from all subjects.

Thirty-two NTDT patients, mean age 33.53 ± 10.3 (range 17–53), were enrolled (Supplemental table); 15 were splenectomized, 12 had cholecystectomy. All patients, but one who received 2 transfusions, were never transfused in the last year before enrollment. Thirty healthy controls (HC), including patients' relatives, were also included. In our cohort, no significant differences were found between patients and controls in terms of depression, while anxiety was more prevalent among HC (Supplemental table). BDI and STAI scores correlated with each other ($p < 0.01$, $r: 0.5$) but they did not correlate with age or education level, both in patients and in controls, nor with hemoglobin levels (Fig. 1) or with the number of comorbidities in patients.

According to our findings, Italian NTDT patients present with a strikingly different psychological profile than the Lebanese group, with a lower depression prevalence rate, in spite of the peculiar period of testing. Among NTDT, prevalence and severity of anxiety and depression were not increased compared to HCs and to the general population during the pandemic [6]. Study discordance could be partly explained by the slightly higher mean hemoglobin levels in Italian NTDT patients, even though in the whole sample range of hemoglobin levels (7.4–11.5 g/dL) we did not find a sign of inverse correlation with depression severity.

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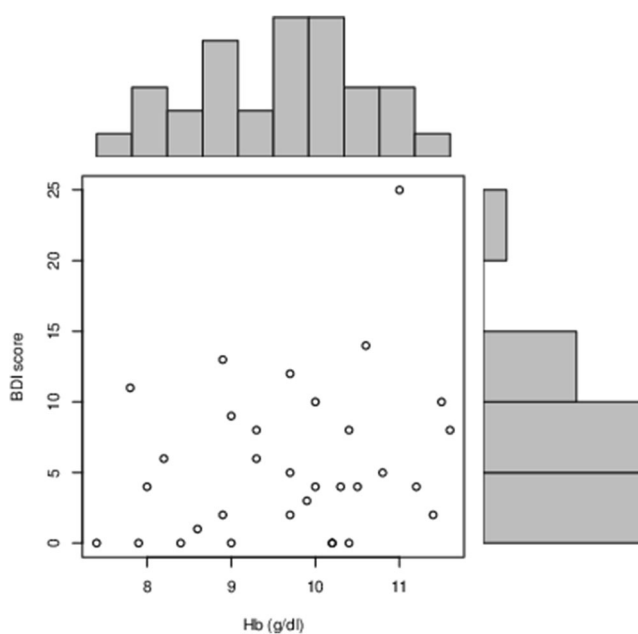


Fig. 1 Correlation between Beck Depression Inventory (BDI) scores and hemoglobin levels among non-transfusion-dependent thalassemia patients ($p=0.15$, $r: 0.2$)

The different behavioral profile among Italian and Lebanese beta-thalassemia patients should be considered when approaching NTD patients: trying to measure the effectiveness of an experimental anemia drug with the improvement of depression scores could be counterproductive, as the linear model suggested by Mihailescu does not apply to other groups. Whether this difference is related to management-, social-, or country-specific differences is still to be clarified.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s00277-021-04444-9>.

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Code availability Not applicable

Author contribution I.T., R.M., S.R., and G.S. designed the research; I.T., S.P., M.V.F., F.A., A.Q., R.D.C., E.D.M., G.R., and A.M. enrolled subjects and collected data. I.T. and R.M. analyzed the data and drafted the

manuscript. All authors reviewed and edited the manuscript and approved the final version and the submission.

Data availability Data will be available upon request to the corresponding author.

Declarations

Ethics approval The study was approved by the local Ethics Committee and was conducted in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Consent to participate Informed consent was obtained by all subjects.

Consent for publication Not applicable

Conflict of interest I. Tartaglione reports consultancy for bluebird bio; advisory board: Celgene and bluebird bio. G.B.R. reports speaker's bureau fees from Novartis and Chiesi, and membership of advisory committee for bluebird bio and Novartis.

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