

A simplified score for assessment of fetal maturation in newborn infants

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The proper gestational age assessment in sick newborns, especially in small-for-date one, is necessary to make up a proper diagnosis, to introduce the best treatment and early rehabilitation. Up to now a valuable and really simplified maturation assessment procedure for sick newborns was not described (1, 2, 3).

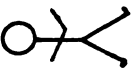
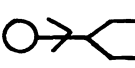


In the groups of 132 sick newborns as well as 445 healthy subjects aging 0 - 14 days of life were studied the usefulness of 32 parameters of maturation, it means 28 from Lubchenco scale (3) and 4 external measurable parameters (3 birth parameters: body length, head and chest circumferences, big fontanel surface).

On the basis of clinical assessment and statistical calculation (using correlation and regression analysis by the aid of Odra 1204 computer with program LAM - Rel - el on 1% confidence level) it was demonstrated that, the most useful for sick newborns aging 0 - 14 days of life are 3 parameters: body birth length, "scarf" sign and plantar creases.

The simple regression equation with these let us to assess gestational age with the accuracy of 1,9 weeks. Discussed regression equation can be demonstrated as a figure what simplifies gestational age assessment of sick newborns. The use of percentile scale for body birth weight, as Lubchenco scale (3) let us to assess the maturity (Fig 1).

It must be emphasize that the material chosen for our study (sick newborns born by unselected mothers population) is quite different than in previously published scales for fetal age assessment. Other authors, as Ballard (1), Dubovitz et al (2) and Lubchenco (3) assessed gestational age in healthy infants born by the mothers having regular, 28 days menstrual cycles.

In previously described scales the results are well respectable only in certain newborns age, up to fifth day (2). Using the scale proposed in this paper it is possible to assess quickly (measuring only 3 parameters) the gestational age as well of the sick as of the healthy newborns with the error of about 2 weeks.

Plantar creases	No crease 1	1-2 anterior 2	2-3 anterior 3	2/3 anterior 4	On the heel 5	Cover entire sole 6
Scarf sign:						
Birth length in cm						

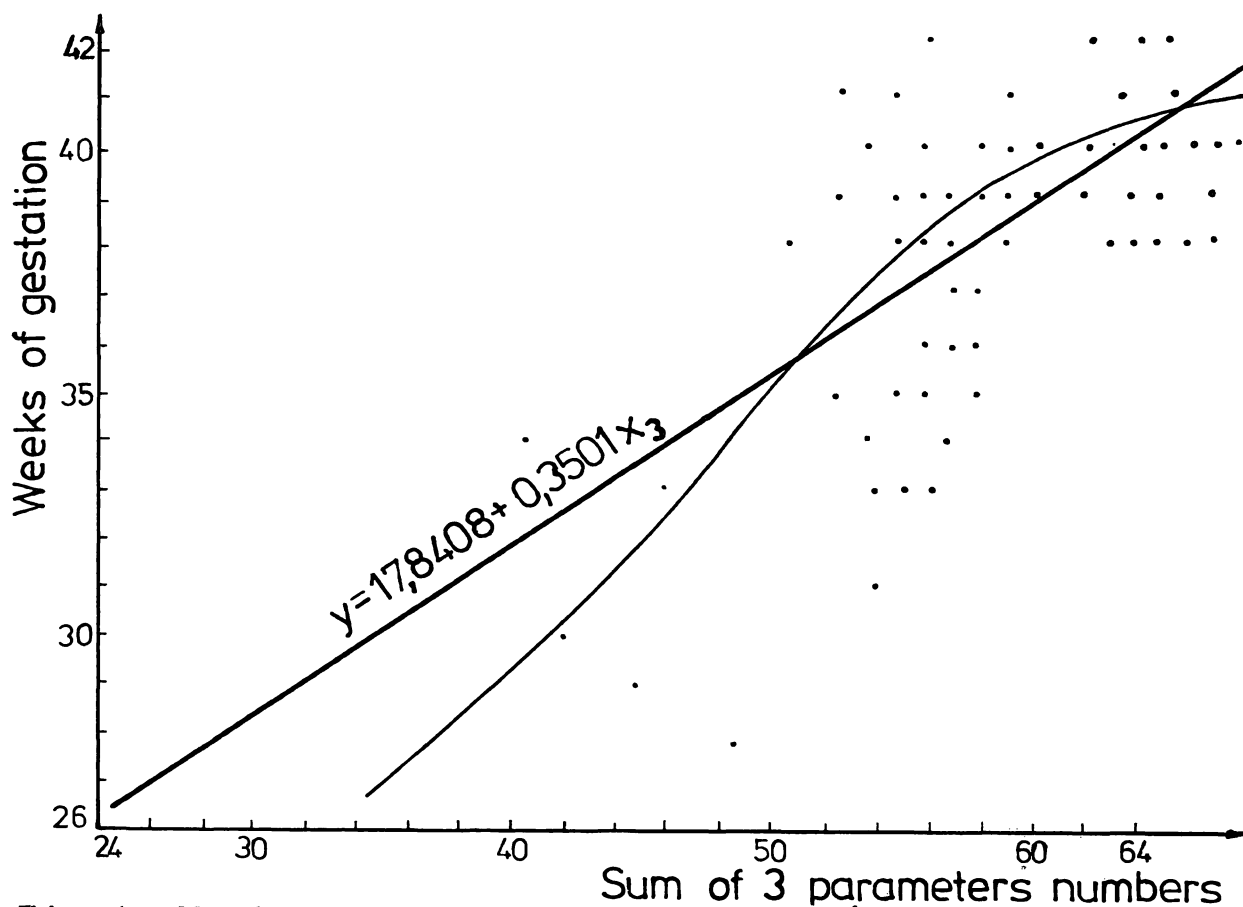


Fig.1. Malina scoring system for sick and health newborn(till 30 day of life).

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