

Erythropoietin measurement for monitoring of erythropoiesis in patient with erythropoiesis problem; a situation analysis in Thailand due to cost change



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Core tip

The investigation of erythropoietin level has just been introduced for a few years. In the first phase of introduction, it was noted that the test was not cost effective compared to the routine classical test, reticulocyte count. Nevertheless, at present, the test is more widely available. The change of unit cost a present is very interesting.

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The erythropoietin is an important hormone produced from kidney. This hormone plays an important role in erythropoiesis. In the patients with erythropoiesis problem, the aberration of erythropoietin level can be observed. The good example is the thalassemia, a congenital hematological disorder with severe ineffective erythropoiesis. The erythropoietin is a clinical laboratory test that is useful for monitoring of the patients with thalassemia (1). Nevertheless, due to the concern on the cost, there is a limitation of its administration in developing countries with high prevalence of thalassemia. In Thailand, there is an extremely high prevalence of thalassemia. The investigation of erythropoietin level has just been introduced for a few years. In the first phase of introduction, it was noted that the test was not cost-effective compared to the routine classical test, reticulocyte count (2). Nevertheless, at present, the test is more widely available. The change of unit cost a present is very interesting.

Here, the authors perform a unit cost analysis for the erythropoietin level measurement. The data based on the situation in 2017 in the standard referencing laboratory in Bangkok Thailand. The methodology is the same as previously reported (2). The derived cost in 2017 was compared to the situation in 2002 (2), a 15-year period prior to the situation in 2017. The cost

identification for 2017 situation shows that the cost for erythropoietin test is 7.75 USD. Of interest, the cost of the erythropoietin measurement in 2017 is comparing to the situation in 2002 (cost = 46.5 USD), when the test was firstly introduced to Thailand. The reduction of cost is about six times. The cost-effectiveness of the test is significantly changed. From the previous situation in 2002 (2), the cost-effective was 6.46 USD/detection to 1.08 USD/detection for situation in 2007. Comparing this data to the case of reticulocyte count, the cost in 2002 and 2017 is stable (0.93 USD). The cost-effectiveness of reticulocyte count remains 1.55 USD/detection. At present, due to the significant cost reduction, the erythropoietin measurement becomes more cost effective comparing to classical reticulocyte count. This observation can show the fact that the cost of any new laboratory investigation is usually high when it is firstly introduced for clinical administration and the reduction of cost can be observed when time pass. The re-evaluation of the cost of the test after a period of its implementation for clinical administration can be useful for re-consider for selection of the proper laboratory investigation.

Conflicts of interest

The authors declare no conflicting interest.

Authors' contribution

SY and VW wrote the manuscript equally.

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

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