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Red blood cell transfusion in obstetrics and its implication for patient blood management: a retrospective analysis in Switzerland from 1998 to 2016

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Between 2003 and 2009, haemorrhage, hypertensive disorders and sepsis were responsible for more than half of the cases of maternal deaths according to a WHO analysis. Most of these deaths occurred in underdeveloped and developing countries and could have been prevented.

Reducing the maternal mortality rate has long been a global health goal pursued as one of the priorities in the United Nations Millennium Development Goals (Millennium Development Goals [MDG]), proposed around the year 2000.

In first world countries, the incidence of peripartum haemorrhage is 5-15%, a figure that is surprising. In addition, the stressful situation that is generated by a haemorrhagic event in the obstetrics setting has much stronger emotional overtones than other bleeding situations.

This retrospective study by Zdanowicz includes Swiss birth records from 40 obstetric hospitals between 1998 and 2016 and analyses the variations in the consumption of packed red blood cells (RBCs) throughout that period. The sample studied is very large (more than 600,000 births) and the study period was divided into two unequal periods: from 1998 to 2011 and from 2012 to 2016. This partition is due to the fact that in 2012 new guidelines for treating anaemia in pregnancy were implemented in Switzerland. One difference that stands out between the two periods is the decrease in the number of ≥ 3 units of RBC administered, whilst the number of 1–2 units of RBC increased, in relation to the application of the new guidelines since 2012.

The authors conclude that, with the increase of patients obtaining 1–2 units of RBC in peripartum haemorrhages from 2012, there is the potential for the application of patient blood management (PBM) strategies in the obstetric population.

There is a global trend, and the authors of this article also demonstrate it, towards an increase in the incidence of puerperal haemorrhage, in relation to the increase in the number of deliveries via vaginal instruments (forceps, suction cup) and the number of caesarean sections.

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Some other risk factors described in women today are: maternal age (there are older mothers), multiple pregnancies, fibroids, preeclampsia, chorioamnionitis, placenta previa, cervical laceration, uterine rupture and history of puerperal haemorrhage in previous pregnancies.

The use of the “4T” mnemonic rule is suggested for easy recognition of the aetiology of postpartum haemorrhage: Tone (uterine atony), Tissue (retention of products of conception), Trauma (injury to the birth canal) and Thrombin (coagulation disorders), with uterine atony a predominant cause of immediate postpartum haemorrhage and responsible for 6% of maternal deaths in developed countries according to some studies.

In my view, the pregnant patient is subject to application of the first pillar of PBM when supplementation with iron and folic acid should be initiated almost from the moment of conception to reduce the incidence of anaemia. Iron supplementation has been shown to prevent maternal anaemia, and also appears to reduce the incidence of low birth weight.

The second pillar of PBM, minimising bleeding, is pursued with the early application of uterotonics, the application of uterine massage/compression manoeuvres and the administration of tranexamic acid. However, the woman's body prepares for the moment of childbirth by increasing clotting factors and reducing fibrinolytic activity. Therefore, the full-term pregnant woman presents a procoagulant state.

Regarding the third pillar, the improvement of tolerance to anaemia is an individualised strategy, but in general terms, the puerpera is a healthy and vigorous patient who should tolerate low haemoglobin levels well, allowing rationalisation of transfusion. This statement has limits of course, and depends, among other things, on the speed and amount of blood lost in the puerperium.

The article makes one wonder about the utility of other blood saving tools such as the cellular recuperator, which is probably underused, partly because how abrupt and unexpected these bleeding situations are. Also noteworthy is the absence of references in the article about the use of viscoelastic tests in the management of puerperal haemorrhage.

Reviewed references:

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