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Preterm birth and very low birthweight: Do hospitals that treat more preterm babies provide them with better care?



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Preterm birth is fairly common. In Germany, around 7 out of every 100 pregnancies end before term (7%), and about 1 out of every 100 newborn babies weighs less than 1,500 g at birth (1%). The number of babies with a very low birthweight has almost doubled in the last 10 years. There are several reasons for this. More women are having children at an older age and more women are becoming pregnant through artificial reproductive techniques, like IVF. These factors, and multiple pregnancies, increase the risk of preterm birth.

The earlier a baby is born, the smaller and less developed he or she will be. Preterm babies are usually not yet ready for life outside of the uterus (womb). Newborns normally weigh 2,500 g or more at birth. Depending on their birthweight, preterm babies are divided into three groups:

- Newborns with extremely low birthweight (less than 1,000 g)
- Newborns with very low birthweight (between 1,000 g and 1,500 g)
- Newborns with low birthweight (between 1,500 g and 2,500 g)

The risk of complications is particularly high in newborns who weigh less than 1,500 g. It takes about 32 weeks for a baby's lungs to develop enough to work on their own. That is why babies who are born very early often have problems breathing. Preterm babies may also have other complications, including bleeding in the brain (intraventricular haemorrhage), a bowel infection and other infections. But there are many things that can be done to lower the risk of these happening. You can read more about that in our fact sheet (URL: <http://www.informedhealthonline.org/index.351.en.html>).

Specialist care

If a woman is at high risk of having her baby preterm, it is especially important that she gives birth in a hospital that has a well-equipped neonatal unit ("neonatal" comes from the Greek word meaning newborn). Neonatal units have specialist teams who monitor very small and very preterm babies, and give them the best possible care. They have special medical equipment which can help the baby to

breathe and, among other things, make sure that his or her body temperature does not drop too low.

Good care is critical for preterm babies, especially those who are born very early. These babies often need a lot of support to breathe properly and help their lungs develop. They have to get enough nutrients and stay warm. Neonatal intensive care units (NICUs) are equipped for this. Preterm babies who are born in hospitals that cannot provide the best treatment often have to be transferred to another hospital with a well-equipped neonatal unit.

For a long time now there has been a debate among experts about what role the experience of doctors, midwives and nurses plays in the quality of care for preterm babies. There is an ongoing discussion in Germany about whether to introduce a minimum volume (number) regulation for hospitals regarding the care of babies with a very low birthweight and babies who are born before 32 completed weeks of pregnancy. A regulation like this would mean that a hospital would only be allowed to have this kind of intensive care unit if it treats more than a certain minimum number of preterm babies per year.

But, beside the practical experience of the hospital staff, several other factors - not related to the number of treated preterm babies - may influence the quality of care a hospital can provide. These include, for example, what kind of training the staff has received, and what kind of equipment the neonatal unit has. It is important that the neonatal unit is able to provide enough qualified staff around the clock.

In Germany, the Federal Joint Committee (G-BA) decides whether minimum numbers of treated patients should be introduced and, if so, determines what the minimum numbers should be. To help it consider this issue, the German Institute for Quality and Efficiency in Health Care (IQWiG) worked together with researchers from the University of Düsseldorf to analyse the scientific studies in this field.

Research on the relationship between number of babies treated and survival rate

A total of 10 studies were included in IQWiG's analysis, 3 of which were carried out in Germany. Eight of the studies looked at whether the survival rate of preterm or very small babies was better if they were born in hospitals that treated large numbers of preterm and small babies

rather than in hospitals that only treated a few.

The development of babies who are born very early depends on many factors, including when they are born and how much they weigh at birth. Because of this, the IQWiG researchers were particularly interested in whether the studies had taken these factors into consideration. Overall, they found that 6 of the 10 studies were able to help answer their questions.

Risk of dying seems to be lower in large neonatal units

The analysed data showed a clear statistical relationship between the number of preterm babies treated and their survival rate: preterm babies who were born in larger neonatal units were more likely to survive.

However, none of the studies had set out to define specific minimum numbers of treated preterm babies. IQWiG therefore recommends that, if a minimum volume regulation is introduced, this should be accompanied by further study to determine whether the regulation has any effect and, if so, what kind of effect.

But the researchers also stress that many other factors are important for the treatment of very preterm babies. A neonatal unit should be well-equipped, have enough qualified staff, and be able to monitor and care for newborns around the clock.

Because the health of a preterm baby depends on so many individual factors, it is difficult to predict how a given baby will develop. However, most babies are able to leave hospital around the time that they would have been born if they had been born full-term. You can read more about that in our fact sheet (URL: <http://www.informedhealthonline.org/index.351.en.html>).

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Glossary

infection

In medicine, we speak of an infection when a person has caught a germ (an infectious agent). This germ can be a bacterium, a virus, a fungus or a worm. The germ multiplies and then either spreads throughout the body or only attacks one particular organ. As long as there are no signs of a disease, this is called an asymptomatic infection. When the body shows a reaction to the germ in the form of symptoms, this is called a symptomatic infection (an infectious disease). The period between the moment the germs enter the body and the moment the first symptoms of the disease appear, is called the incubation period. It may last a few hours or days, or even many years. An infection does not necessarily have to lead to the onset of a disease.

Sources

German Institute for Quality and Efficiency in Health Care (IQWiG). *Relationship between provider volume and outcomes in the care of preterm infants and neonates with very low birth weight. Final report V07-01*. Version 1.0. Cologne: IQWiG. August 2008. [Executive summary (URL: http://www.iqge.net/download/V07-01_Executive_summary_Relationship_between_provider_volume_and_outcomes_in_the_care_of) [Full text (URL: http://www.iqwig.de/download/V07-01_Abschlussbericht_Menge_und_Ergebnis_bei_der_Versorgung_von_Fruehgeborenen.html) - in German]

German Institute for Quality and Efficiency in Health Care (IQWiG). *Corticosteroids before birth for preterm babies* (Fact sheet). Cologne: IQWiG. March 2008. [Full text (URL: <http://www.informedhealthonline.org/index.351.en.html>)]

Photo: www.flickr.com/photos/kqedquest/855046640/ (URL: <http://www.flickr.com/photos/kqedquest/855046640/>)

The German Institute for Quality and Efficiency in Health Care (IQWiG)

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

Evidence basis of our health information

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at **www.informedhealthonline.org**

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