Vienna, 19 September 2017

Foetal MRI saves unborn babies' lives

2,000 international obstetrics and gynaecology experts discussed the use of foetal MRI scans to diagnose and help plan treatment of foetal disorders at the ISUOG World Congress at the Austria Center Vienna. Austria is leading the way: at Vienna General Hospital alone around 530 foetal MRI scans each year give parents additional clarity on their unborn child's development.

- **MRI cross sections supply important information about the development of foetuses' lungs, brain and other vital organs.**

- **The insights delivered by the MRI aid diagnosis, paving the way for life-saving surgery.**

- **Successful Viennese model: ISUOG introduces MRI certification for the first time at the congress.**

It is every pregnant woman's worst nightmare: routine organ screening or an ultrasound detects abnormalities in the foetus. In such cases, **foetal magnetic resonance imaging (MRI)** can be used to provide additional clarity regarding the baby's development. This type of imaging produces sectional images of the inside of the unborn baby's body, and the developing **internal organs** as well as the placenta and womb without using x-rays or contrast media. The use of colour to show regions that require lots of oxygen, such as the foetal brain, allows radiologist to draw conclusions about **brain function**.

"This technology enables us to make a **clear diagnosis** if brain damage, cerebral bleeding, lung issues or other critical situations are **suspected**, providing a basis for future decision making," explained Dr. Daniela Prayer. Her Department of Neuroradiology and Musculoskeletal Radiology scans around 530 expectant mothers a year at **Vienna General Hospital**. "This is towards the top end of the international scale. The majority of centres conduct just 2-5 foetal MRIs a week. So in Austria we are doing at least twice as many. The Austrian health care system stands out for its excellent prenatal doctors, in other words gynaecologists, who conduct routine examinations during pregnancy. If abnormalities are detected, we are in a position to react and clarify the situation quickly thanks to the excellent infrastructure in place at centres such as Vienna General Hospital," Prayer noted.

Internationales Amtssitz- und Konferenzzentrum Wien, AG
T +43-1-26069-0 I F +43-1-26069-303
Handelsgericht Wien, Firmenbuch Nr: FN 102030 w

A-1220 Wien I Bruno-Kreisky-Platz 1
office@acv.at I www.acv.at
ATU 15663100, DVR-Nr. 0484865

Lung maturity a decisive indicator of chances of survival

It is possible to determine lung maturity and volume in a foetus using MRI from around 20 weeks onwards (foetus size of around 24cm). In the event of a **premature birth** brought about by spontaneous rupture of the amniotic sack, the right device to treat breathing problems can be prepared so that the child has a good **chance of survival** despite having **underdeveloped lungs**. Vienna General Hospital has already reported significant advances in the treatment of premature babies born as early as the 22nd week.

MRI technology also supplies essential information when it comes to diagnosis and preparing for surgery on unborn babies. If an ultrasound and MRI scan determine **diaphragmatic hernia** – a condition in which the diaphragm is not properly developed and abdominal organs can be pushed through the opening into the chest and apply pressure on the lungs – **operations on unborn babies** can be conducted in specialist international centres, so ultimately the lungs are sufficiently well developed to enable the newborn to **breathe unassisted**.

Early insights into brain development

Foetal MRI also enables physicians to monitor brain development and identify any abnormalities such as enlarged ventricles or cerebral bleeding at an early stage. “In future, foetal MRIs should specialise increasingly on **rendering brain functions** with a view to identifying whether certain functions can be taken over by other regions of the foetus’ brain in the event of brain damage,” the respected neuroradiologist said.

World first: MRI certification at the ISUOG Congress

There are currently very few places where radiologists and prenatal diagnosticians can learn about the use of foetal MRI. A special training course at the ISUOG World Congress in Vienna will enable them to acquire a **basic certificate in foetal MRI** techniques. “For us, this represents an important step towards improving the standard of foetal magnetic resonance imaging internationally,” Prayer concluded.

ISUOG World Congress

Around 2,000 prenatal diagnosticians and specialists will meet at the Austria Center Vienna between 15 and 21 September 2017 for the International Society of Ultrasound in Obstetrics and Gynaecology (ISUOG) World Congress to discuss the latest research findings in their discipline. The Austrian congress presidents are Dr. Christoph Brezinka from the University Hospital for Gynaecological Endocrinology and Reproductive Medicine in Innsbruck and Dr. Daniela Prayer, Head of the Division of Neuroradiology and Musculoskeletal Radiology at Vienna General Hospital.

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Contact

IAKW-AG – Austria Center Vienna
Claudia Reis
Press Officer
Tel: +43-676 3199-523
Email: claudia.reis@acv.at

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