

## PRESS RELEASE

### Preventing acute confusion after cardiovascular procedures through prevention

Researchers in Bonn identify delirium as a common but insufficiently recognized complication in cardiac medicine

**Bonn, February 20 – Analysis of approximately 1604 studies from over three decades proves that delirium is a clinically highly relevant but scientifically often neglected complication in cardiology. Prevention can reduce the incidence of delirium by up to 40 percent. The review, led by the University Hospital Bonn (UKB), has now been published in the renowned European Heart Journal and provides systematic prevention strategies and innovative treatment recommendations.**

Delirium is a sudden onset of acute confusion in which those affected are disoriented, have impaired attention, and experience altered perception – often accompanied by hallucinations or sleep disturbances. In cardiology, it is one of the most common but also one of the most underestimated complications. Older patients who have undergone cardiac surgery or interventional procedures are particularly affected. A new international state-of-the-art review involving leading cardiologists, cardiac surgeons, intensive care physicians, and psychiatrists has come to an alarming conclusion: delirium goes far beyond temporary confusion. It is associated with longer stays in intensive care and hospital, increased mortality, higher rates of care dependency, and a significantly increased risk of permanent cognitive impairment. In addition, delirium is an independent predictor of long-term mental decline – even in individuals who were previously cognitively normal.

#### High incidence of delirium – massive consequences

Depending on the procedure and survey method, a significant number of patients develop delirium. Complex cardiac surgery in particular, but also interventional procedures such as TAVR or PCI, are by no means risk-free, especially in very elderly and pre-existing patients. That is why Prof. Dr. Dr. Enzo Lüsebrink, a cardiologist in Bonn and co-last author of the study, and Prof. Dr. Georg Nickenig, director of the Clinic for Cardiology at the UKB, are clear: "Delirium is not a marginal problem, but one of the central complications of modern cardiac medicine."

#### Often overlooked, rarely systematically recorded

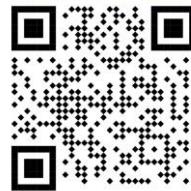
Despite its clinical relevance, delirium often goes unrecognized in cardiovascular practice. The so-called hypoactive form in particular – characterized by apathy, reduced activity, and listlessness – often remains undiagnosed and is mistakenly interpreted as age-related or exhaustion. "Validated and standardized screening instruments such as the Confusion Assessment Method, or CAM for short, with the corresponding extension for intensive care units, which can be used quickly and reliably, are still far too rarely used routinely in everyday

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clinical practice," says co-first author Endrit Cekaj, assistant physician at the Clinic for Cardiology at the UKB.

### **Prevention is crucial**

A key finding of the review is that the most effective strategy against delirium is prevention. Multimodal, non-pharmacological measures – including early mobilization, reorientation, sleep hygiene, cognitive stimulation, adequate pain management, and the involvement of relatives – can reduce the incidence of delirium by up to 40 percent. However, the study takes a critical view of the routine prophylactic use of medication.

"We also clearly show that delirium does not have to be accepted as inevitable, even if it occurs despite consistent prevention," says co-first author Dr. David H.V. Vogel, head of the "Experimental Psychopathology" research group at the Clinic for Psychiatry and Psychotherapy at the UKB. Based on the current evidence and an interdisciplinary expert consensus, the authors formulate structured treatment approaches that are based on severity, clinical setting, and delirium subtype.

### **Treatment of delirium: evidence-based and practical**

The focus continues to be on non-pharmacological measures. These form the therapeutic basis for all degrees of severity. In addition, pharmacological options are presented in a differentiated manner when clinically necessary. In intensive care medicine in particular, the sedative dexmedetomidine has been shown to be beneficial in moderate to severe delirium. Antipsychotic substances can be used depending on the situation and symptoms, whereby the benefits and potential cardiac side effects must be carefully weighed up.

"A structured, step-by-step approach is crucial," explains Prof. Lüsebrink. "Our work shows that there are also evidence-based and clinically practicable treatment strategies in the cardiovascular setting – provided that delirium is detected early and treated in an interdisciplinary manner." Co-last author Prof. Dr. Alexandra Philipsen, Director of the Clinic for Psychiatry and Psychotherapy at the UKB, explains why a holistic view is so important: "We can successfully treat our patients medically for heart conditions. But if we do not systematically recognize and prevent delirium, we risk long-term damage to the brains of those affected. Delirium prevention must therefore become an integral part of cardiovascular care."

Despite growing knowledge, evidence specifically for cardiovascular patient groups remains limited. The authors therefore call for targeted, prospective studies to develop specific guidelines for prevention and treatment.

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**Image material:**



**Caption: Delighted with the success:**

Prof. Dr. Alexandra Philipsen (front left), Prof. Dr. Dr. Enzo Lüsebrink (front right), Dr. Dr. David H.V. Vogel (back left), and Endrit Cekaj (back right) identify delirium as a common but insufficiently recognized complication in cardiac medicine. They provide prevention strategies and treatment recommendations.

**Image credit:** Heart Center at UKB / Felix Heyder

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**About Bonn University Hospital:** As one of Germany's most productive university hospitals, the UKB combines excellence in medicine and research with outstanding teaching. Every year, the UKB treats over half a million outpatients and inpatients. Around 3,500 people study medicine and dentistry here, and over 600 people are trained in healthcare professions every year. With around 9,900 employees, the UKB is the third-largest employer in the Bonn/Rhein-Sieg region. In the Focus clinic list, the UKB ranks first among university hospitals in North Rhine-Westphalia and has the second-highest case mix index (case severity) among university hospitals nationwide. In 2024, the UKB was able to raise almost €100 million in third-party funding for research, development, and teaching. For the fourth year in a row, the F.A.Z. Institute named the UKB "Germany's Training Champion" and "Germany's Most Desirable Employer." Current figures can be found in the annual report at:

[geschaeftsbericht.ukbonn.de](http://geschaeftsbericht.ukbonn.de)