## Hot Topic

# Non-factor replacement therapies in hemophilia

**Rüdiger E. Scharf**

Division of Experimental and Clinical Hemostasis, Hemotherapy and Transfusion Medicine, and Hemophilia Comprehensive Care Center, Institute of Transplantation Diagnostics and Cell Therapy, Heinrich Heine University Medical Center, Düsseldorf, Germany

Novel *non-factor replacement* therapeutic strategies for patients with hemophilia have become reality and are now being tested in clinical trials (1, 2). Thus, we are facing the beginning of a new era in hemophilia care (3).

In this edition of *Hämostaseologie – Progress in Haemostasis*, the *Journal's* novel category **"Reviewed & Commented"** that was introduced in issue 3/2016 (4) is now being continued. **Tiede** reports on personally selected highlights of the recent ISTH congress in Berlin (5). The subject matter is again groundbreaking advances in hemophilia care by non-factor replacement strategies.

Two novel agents are in focus:

- emicizumab, a FVIIIa-mimetic bispecific antibody, targeting FIXa and FX, thereby exerting FVIII cofactor activity, and
- fitusiran, a small interfering ribonucleic acid (siRNA), inducing antithrombin silencing.

The use of those novel agents and the results of two highlight communications (6, 7) presented at the ISTH 2017 and simultaneously published in the *New England Journal of Medicine* are carefully reviewed and critically commented by the author with regard to adverse effects of the agents, specifically their thromboembolic potential (5).

I am grateful to **Andreas Tiede** for his contribution and for sharing his personal view on this subject matter with our readers.

Prof. Dr. Rüdiger E. Scharf
Division of Experimental and Clinical Hemostasis, Hemotherapy and Transfusion Medicine, and Hemophilia Comprehensive Care Center, Institute of Transplantation Diagnostics and Cell Therapy, Heinrich Heine University Medical Center, Düsseldorf, Germany

## References

1. Ragni MV. Targeting antithrombin to treat hemophilia. N Engl J Med 2015; 373: 389–391.
2. Shima M, Hanabusa H, Taki M, et al. Factor VIII-mimetic function of humanized bispecific antibody in hemophilia A. N Engl J Med 2016; 374: 2044–2053.
3. Klamroth R. A new era of treatment for patients with haemophilia A? Hämostaseologie 2017; 37: 216–218.
4. Scharf RE. Hot topic: Alloantibodies to therapeutic FVIII and the use of emicizumab in hemophilia A. Hämostaseologie 2016; 36: 195–198.
5. Tiede A. Thrombotic risks of non-factor replacement therapies in hemophilia. Hämostaseologie 2017; 37: 307–310.
6. Oldenburg J, Mahlangu JN, Kim B et al. Emicizumab prophylaxis in hemophilia A with inhibitors. N Engl J Med 2017; 377: 809–818.
7. Pasi KJ, Rangarajan S, Georgiev P, et al. Targeting of antithrombin in hemophilia A or B with RNAi therapy. N Engl J Med 2017; 377: 819–828.

**Correspondence to:**
Univ.-Prof. Dr. Rüdiger E. Scharf, F.A.H.A.
E-mail: rscharf@uni-duesseldorf.de
**Hämostaseologie 2017; 37: 238**
**received and accepted: September 21, 2017**