X pect - H. Puererfellner

- Introduction: There is a poor correlaton of symptoms with atrial fibrillation (AF), which makes the subjective evaluation of a therapeutic effect of any given therapy unreliable. However, accurate arrhythmia monitoring is required both in clinical practice (to determine the efficacy of rhythm control therapy) and in rhythm control trials (when freedom of AF is the outcome parameter). AF is significantly underdetected by intermittent monitoring systems. Continuous monitoring by implantable loop recorders (ILR) further increases the detection of AF, but it is hampered by misdetections and artefacts. Technological improvements are required for significant reduction of maldetection. Manual analysis can improve diagnostic yield if stored electrograms are provided.

- Methods: The results of three trials encompassing the development of 2 generations of implantable loop recorders (Reveal XT, Reveal LINQ) are provided to demonstrate significant improvements in AF detection and burden quantification in clinical practice. The latest generation device is significantly miniaturized and injectable. A new algorithm to detect P-waves to further enhance AF detection is introduced.

- Conclusion: Technological improvements in the latest generation ILRs enable superior AF detection and AF burden characterization. The clinical relevance of loop recorders to guide medical and device therapy has yet to be demonstrated to justify a more widespread use.