The EUFOREA pocket guide for chronic rhinosinusitis*


1 KU Leuven Department of Microbiology, Immunology and Transplantation, Laboratory of Allergy and Clinical Immunology Research Group, Leuven, Belgium
2 University Hospitals Leuven, Department of Otorhinolaryngology, Leuven, Belgium
3 University Hospital Ghent, Department of Otorhinolaryngology, Laboratory of Upper Airways Research, Ghent, Belgium
4 Department of otorhinolaryngology and head/neck surgery, Amsterdam University Medical Centres, location AMC, University of Amsterdam, Amsterdam, The Netherlands
5 Rhinology and Skull Base, Department of Otorhinolaryngology, Hospital Clinic, Universitat de Barcelona, Centro Médico Teknon, Barcelona, Spain
6 The University of Chicago Medicine, Chicago, IL, United States
7 Dept of Respiratory Medicine and Allergology, Skane University Hospital, Lund, Sweden
8 Division of Rhinology, Allergy, and Endoscopic Skull Base Surgery, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA
9 The university of Queensland Centra for Clinical Research, Herston, Australia
10 Royal Brisbane and Women’s Hospital, Brisbane, Australia
11 Department of Otorhinolaryngology-Head and Neck Surgery, University of Pennsylvania, Philadelphia, PA, USA
12 I st Department of ORL, Head and Neck Surgery, Aristotle University, AHEPA Hospital, Thessaloniki, Greece
13 Department of Otolaryngology Head and Neck Surgery, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica Sacro Cuore, Rome, Italy
14 Department of Otolaryngology-Head and Neck Surgery, Université de Montréal, Montreal, Canada
15 Department Clinical Pharmacy and Pharmacology, University Groningen, University Medical Center Groningen, Groningen, the Netherlands
16 Department of Surgery, The University of Auckland, New Zealand
17 Royal National Ear, Nose and Throat and Eastman Dental Hospitals, London, United Kingdom
18 Department of Otolaryngology and Head and Neck Surgery at Eastern Virginia Medical School, Norfolk, Virginia, USA
19 Rhinology and Skull Base, Applied medical research Center, University of New South Wales, Sydney, Australia
20 Faculty of medicine and health sciences, Macquarie University, Sydney, Australia
21 Ear, Nose and Throat Department, Guys and St. Thomas Hospital, London, United Kingdom
22 Department of Otolaryngology, Head and Neck Surgery, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA
23 Division of Allergy-Immunology, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA
24 Hopitaux Universitaires de Genève, Genève, Genève, Switzerland
25 Department of Head and Neck Surgery, University of California Los Angeles David Geffen School of Medicine, Los Angeles, CA, USA
26 Brigham and Women’s Hospital, Harvard Medical School, Department of Surgery, Division of Otolaryngology—Head and Neck Surgery, Section of Rhinology and Skull Base Surgery, Boston, MA, USA
27 Rhinology Center Munich and ENT-Clinic, Munich, Germany
28 Royal National Throat, Nose and Ear Hospital, UCLH, London, UK
29 Department of Otorhinolaryngology, hospital clinic Barcelona, Spain
Dear Editor:

Chronic rhinosinusitis (CRS) is known to affect around 5% of the total population, with major impact on the quality of life of those severely affected. Despite a substantial burden on individuals, society and health economies, CRS often remains under-diagnosed, under-estimated and under-treated. International guidelines like the European Position Paper on Rhinosinusitis and Nasal Polyps (EPOS) and the International Consensus statement on Allergy and Rhinology: Rhinosinusitis 2021 (ICAR) offer physicians insight into the recommended treatment options for CRS, with an overview of effective strategies and guidance of diagnosis and care throughout the disease journey of CRS. However, barriers to access to appropriate diagnosis and effective treatment remain at patient, pharmacist and physician levels, including inability to recognize CRS and diagnose it, inappropriate CRS medication prescription/use, poor concordance with CRS treatment recommendations and/or lack of awareness of newly available options for CRS care. Of note, endoscopic sinus surgery and oral corticosteroids (OCS) do not always result in full disease control, with the need of referral to tertiary care. For the evaluation of the severity of disease, and follow-up of treatment outcomes, the visual analogue scale (VAS) has been introduced as a simple tool, mainly in the context of e-health for disease monitoring and clinical trials. However, guidelines based solely on VAS may not reflect the needs of physicians and patients in real-life, since VAS scores are not routinely used in everyday practice and may not capture the clinical phenotypes. In addition to VAS scores, Sino-Nasal Outcome test (SNOT)-22 scores may be more informative given the evaluation of different sinonasal and overall symptoms reflecting the burden of disease, and the well-known scores in the general population as well as in those with severe CRSwNP having been included in all surgery and biological trials in recent years.

Building further on the success of the pocket guides for adult and paediatric allergic rhinitis, the European Forum for Research & Education in Allergy & Airway Diseases (EUFOREA) in collaboration with global key opinion leaders in the field of chronic inflammatory airways disease, has developed a CRS pocket guide with a new treatment algorithm with the following aims: to expedite access to CRS diagnosis and treatment, to simplify clinical care pathways of CRS, and to facilitate coordinated care amongst the stakeholders involved in CRS care. The algorithm is based on the EPOS2020 and ICAR-Rhinosinusitis 2021 documents, and designed for real-life use. Given the clear messages on key diagnostic actions and simplicity of the CRS algorithm, the EUFOREA pocket guide aims at improving CRS knowledge amongst all stakeholders involved in CRS care and streamlining the transition of patients between self-, pharmacy-, GP- and specialist-care, facilitating more coordinated care. The EUFOREA pocket guide also includes a diagnostic checklist when assessing CRS patients including a list of symptoms suggestive and less suggestive of CRS, questions on suspected comorbid asthma, and instructions on how to use the VAS for CRS. The diagnosis of smell dysfunction and nasal congestion or obstruction require specific diagnostic actions beyond history by health care providers (Figure 1). In addition a list of suggested indications is provided for referral of specific CRS patients to specific colleagues, reflecting the heterogeneity of health care providers involved in CRS care. It makes sense to adopt multi-disciplinary assessments and management for specific patients suffering from com-

---

86
The CRS pocket guide is presented as 5 easy steps: (i) diagnosis, (ii) classification of patients, (iii) definition of therapy, (iv) selection of product, and (v) activation of treatment plan, and with pro-active follow-up of patients. As an overall consideration (Figure 2), patients should be educated on the disease, treatment adherence and avoidance of external triggers, with nasal rinsing and nasal corticosteroids being the mainstay of care. In case of failure of the basics, referred to as step 1 in the algorithm, a firm diagnosis is recommended at specialist level with the consideration of OCS or Endoscopic Sinus Surgery (ESS). In case of failure of step 2 treatment and/or uncontrolled severe CRS, endotyping is recommended at specialist level, including different options for the Type 1 and Type 2 endotypes of CRS. Interestingly, the key pillars of care for severe uncontrolled CRS, i.e., OCS, ESS and biologics all have pros and cons that need to be considered at the time of implementation. At any time in the disease journey, there are red flags that warrant immediate referral and emergency care, as listed in the treatment algorithm (Figure 2).

The CRS pocket guide is available on the EUFOREA (www.euforea.eu) and Rhinology (https://www.rhinologyjournal.com) website, and easy-to-use in everyday clinical practice for any care provider as it is concise, patient-centered, and captures every single patient who attends the outpatient clinic of any care provider. Upon the suggestion of the Patient Advisory Board of EUFOREA, a patient version will appear in 2023 on the EUFOREA website.

Acknowledgements
None.

Authorship contribution
All authors contributed to the development and finetuning of the treatment algorithm and the pocket guide.

Conflict of interest
P. Hellings: lecture fees and/or participation at expert board meetings of ALK, Stallergenes, Mylan, Novartis, GSK and Sanofi.
Figure 2. EUFOREA CRS pocket guide treatment algorithm. AB: Antibiotics; EUFOREA: European Forum for Research & Education in Allergy & Airway Diseases; VAS: visual analogue scale.


Regeneron Pharmaceuticals Inc., Sanofi, and NOUCOR/Uriach Group – speakers’ bureau, advisory board member, or research grants. C. Philpott, E. Prokopakis: No conflict of interest to report. S. Reitsma: has acted as consultant for Sanofi-Genzyme, GSK and Novartis. D. Ryan, S. Salmi: No conflict of interest to report. G. Scadding: chaired the BSACI AR guidelines, has given paid lectures for and an education programme for EUFOREA. She also chairs the EAACI Ethics Committee, the independent data monitoring committee for an ALK allergen immunotherapy trial and the Rhinology and Laryngology Research Fund and has given lectures for and/or advised ALK, Bayer GSK, Mylan, Stallergenes. R.J. Schlosser: Consultant for: Stryker, Medtronic, Optinose, Healthy Humming, Cyano. A. Steinsvik, P.V. Tomazic, E. Van Staeyen: No conflict of interest to report. T. Van Zele: Is a consultant for Medtronic. O. Vanderveken, A-S Viskens: No conflict of interest to report. M. Wagenmann: Has received grants form ALK-Abello, GSK, regeneron, Astrazeneca, Novartis, Sanofi, Takeda in the past 36 months. Consultant with ALK-Abello, GSK, Astrazeneca, Novartis, Sanofi, Genzyme, Stallergenes. Has received payment or honoraria for lectures/presentations from ALK-Abello, AstraZeneca, Genzyme, GSK, LETI Pharma, Allergopharma, Bencard Allergie, Infectopharm, Novartis and Stallergenes. D. Conti: No conflict of interest to report.

**Funding**

Funding was provided via an unrestricted grant to EUFOREA by Sanofi Genzyme and Regeneron.

**References**


Prof Dr Peter W Hellings
Department of Otorhinolaryngology
University Hospitals Leuven
Leuven
Belgium

E-mail: Peter.Hellings@uzleuven.be

This manuscript contains online supplementary material