

# The British Rhinological Society Multidisciplinary Consensus on the Hospital Management of Epistaxis

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None declared

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## INTRODUCTION

Epistaxis is the most common acute presentation to ENT services in the UK. In the financial year 2009-10, 23,723 epistaxis-related admissions were recorded in the National Health Service Hospital Episode Statistics for England and Wales<sup>1</sup>. Despite this high incidence, there are currently no nationally accepted guidelines for its management<sup>2</sup>. A recent multi-centred pilot audit<sup>3</sup> undertaken by INTEGRATE (The National ENT Trainee Research Network) demonstrated a wide variation in practice. The goal of this multidisciplinary consensus guideline was to develop agreed evidenced-based recommendations for the management of this common condition. This guideline was then utilized as the gold-standard for the subsequent national audit of epistaxis management<sup>4</sup>.

## METHODS

Recommendations were developed using an AGREE II framework<sup>5</sup>, a method successfully utilized in the 2009 Hereditary Haemorrhagic Telangiectasia guidelines<sup>6</sup>. Consensus member disagreement was managed using an adaptation of the method utilized within RAND/UCLA appropriateness studies<sup>7</sup>. The use of established guideline generation methodology sought to provide rigour in development, despite an expected paucity in high-level evidence.

### Scope and Purpose

Representatives from the ENT-UK Clinical Audit and Practice Advisory Group (CAPAG) and the British Rhinological Society (BRS) approached INTEGRATE highlighting the requirement for nationally accepted standards of care in epistaxis. This guideline seeks to recommend evidence-based best practice for the hospital management of epistaxis of all severity in adults, within the

context of commonly associated comorbidities known to affect outcome. We exclude guidance on paediatric epistaxis, hereditary haemorrhagic telangiectasia and other specific haematological conditions.

### Stakeholder Involvement

The organising committee was composed of 7 junior clinicians including a nominated chair and 2 executive senior members. The organising committee were responsible for developing the consensus methodology and co-ordinating a multi-faceted systematic review of the relevant literature. The consensus panel was composed of patients, ENT surgeons and representative experts from allied specialties involved in the management of epistaxis from across the UK. An open invite was extended to all consultant members of BRS and ENTUK to participate in the consensus panel as ENT representatives. Allied specialty consultants and patient representatives were invited individually following identification by the steering committee as appropriate experts in their fields. Individuals from health economics, emergency medicine, haematology, interventional radiology, general ENT and rhinology all contributed to the guidelines.

### Rigour of Development

For the purposes of this consensus, the management of epistaxis was divided into 5 domains (initial assessment, cautery, intranasal agents, haematological factors, surgery and radiological intervention). Each domain was assigned co-authors from locations throughout the UK. Within the domains, a total of 15 systematic reviews<sup>8-12</sup> were conducted, with the support of Cambridge and Exeter Universities plus the Defence Military Library. A robust yet pragmatic

methodology was followed including validated assessment of bias<sup>13-14</sup>, capturing all relevant published evidence of level 3 and above.

The data synthesis and full-text included articles were made available to the consensus panel members, prior to domain co-authors presenting their findings at a guidelines conference held in Leeds on the 19<sup>th</sup> May 2016. A consensus panel discussion was held following each domain presentation, facilitated by the chair of the consensus panel, seeking to generate management recommendations. These discussions were digitally recorded and converted to a written consensus matrix by the steering committee. Each recommendation was then linked with the level of evidence<sup>15</sup> supporting each statement and a GRADE score<sup>16</sup> explaining the strength of recommendation in context of the evidence plus the perceived harm and benefit. The draft matrix was then returned to the consensus panel electronically for 2 separate rounds of comments and subsequent adjustment.

Following final consensus matrix adjustment, the level of consensus agreement was then sought by requesting consensus panel members to independently assign an agreement rating from 0-10 for each recommendation. 0 represented complete disagreement with the statement and 10 absolute agreement. Panel members were asked to abstain from comment when the specific recommendation was felt to be outside their clinical remit. Statements achieving a median rating of <7 were excluded from the consensus matrix. Disagreement was defined as statements achieving a median rating  $\geq 7$  but with individual ratings of <4. In these cases, outlying panel members were given the opportunity to revise their score if desired. All retained statements were reported with their median consensus agreement rating, range of ratings and an asterisk annotated where ratings were revised following disagreement.

It is anticipated that the consensus recommendations will be updated following completion of each cycle of the national audit of epistaxis management<sup>4</sup>.

## RECOMMENDATIONS

### Initial Assessment (fig. 1)

Despite low and very low quality of evidence, a number of strong recommendations were made. This was achieved due the lack of perceived risk of recommendation versus consensus agreed benefit. Recommendations centred round the use of a structured ABC approach and the recording of key comorbidities with evidence available to support their impact on patient outcome. Very low quality or absence of evidence limited the strength of recommendation regarding the use of well-established first aid methods as well as specific statements regarding the clinical examination methods and investigation of patients presenting with epistaxis. Despite these limitations there were consistently high agreement rating levels with minimal disagreement in accepted statements.

### Cautery (fig. 2)

Low and very low quality evidence again limited the strength of recommendations made regarding intranasal cautery (fig. 3). Strong recommendations were made supporting cautery as a first line treatment in all patients, but that cautery should be targeted at identified points of bleeding. Weak recommendations were made regarding the need for specific cautery training, the use of topical vasoconstrictors, electrocautery in preference to silver nitrate and advanced clinical examinations when a bleeding point is not



initially identified with anterior rhinoscopy. There were high median agreement ratings for all statements with no disagreement.

### Intranasal Agents (fig.3)

This domain was unusually supported, in places, by moderate and strong quality evidence. This allowed the strong recommendation of non-dissolvable anterior nasal packs as an effective haemostatic intervention in stipulated clinical scenarios when placed by individuals specifically trained in their use. Consensus opinion strongly supported the use of targeted cautery following removal of non-dissolvable packs despite no supporting evidence. This was based on a perceived significant benefit balanced against any potential harm or cost. The consensus panel weakly recommended the use of Rapid Rhino packs over Merocel as the non-dissolvable pack of choice, as well as recommendation regarding the length of time a pack should remain in-situ and how long patients should be observed following pack removal. Despite median agreement ratings largely between 8 and 9.5 there were several instances of disagreement.

Recommendations regarding the use of dissolvable packs and haemostatic agents were limited by a paucity of quality evidence, the diversity of available products and a lack of clarity regarding where in the treatment of epistaxis these products should be employed. 3 of the 4 recommendations received low agreement ratings of 7 or 7.5 and there was 1 instance of disagreement.

### Anti-thrombotic therapy (fig. 4) and haematological factors (fig. 5)

Despite no epistaxis-specific supporting evidence, several weak recommendations were made regarding the management of warfarin, direct

oral anticoagulants (DOAC) and heparin. These centred around the extrapolation of generic national guidelines and maintaining a low threshold for seeking case-specific haematological advice. Despite weak strength of recommendations there was universally high levels of median agreement rating with no instances of disagreement.

Similarly, there was no evidence to recommend an epistaxis-specific treatment strategy for the management of ongoing antiplatelet therapy. Consensus opinion recommended the continuation of such agents in uncomplicated cases and the involvement of allied specialties in complex or refractory cases. Levels of agreement were high without disagreement.

Transfusion strategies for epistaxis were again based on evidence unrelated to the condition. Despite this, a number of strong recommendations were made for the use of elements of The British Committee for Standards in Haematology guidelines for the management of major haemorrhage<sup>17</sup>. Median agreement ratings were 10 for recommendations, with 1 instance of disagreement.

Tranexamic acid (TXA) use in epistaxis benefited from moderate quality evidence, however, with inconsistent findings. As a result, weak recommendations for its use were made with median rater agreement of 7 and 8 with disagreement in both epistaxis specific statements. National guidelines regarding the use of TXA in defined major haemorrhage were strongly recommended and received a median agreement rating of 10 without disagreement.

Surgery and Radiological Intervention (fig. 6)

Weak strength recommendations were made regarding the role of surgical and radiological intervention in epistaxis. This was limited by the lack of quality evidence in this area. Despite this, consensus agreement was high for the identified clinical scenarios requiring treatment escalation and that surgery should be preferred to radiological intervention. However, interventional radiologists were outnumbered by ENT surgeons on the consensus panel which may have biased the median agreement rating.

## CONCLUSIONS

These consensus recommendations are based on a wide-ranging review of the relevant literature and established and rigorous methods of guideline generation. As a result, it is envisaged that the findings of this document should be of use to all hospital clinicians managing acute epistaxis. Readers should remain cognisant that the evidence identified to support this guideline is largely of low or very low quality and expert consensus opinion was often required to reach recommendations. Whilst this should not undermine the utility of the document, caution should be use when implementing these findings. These recommendations will continue to be updated as new evidence comes to light.

## EDITORIAL INDEPENDENCE

The systematic reviews and consensus process were funded by ENTUK. The funding body did not influence the content of this guideline.

All consensus panel members were asked to declare with details any competing interests. Competing interests declared were:

AR – Was granted a Research for Patient Benefit grant to investigate the use of topical tranexamic acid (TXA) in epistaxis. To avoid any external concerns regarding a potential conflict of interest, AR's agreement ratings were not included in recommendations regarding the use of TXA in epistaxis.

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