Hot off the press
Evidence Based Medicine: Summary of the National Epistaxis Audit

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The British Rhinological Society (BRS) multidisciplinary consensus recommendations provide evidence-based best practice guidelines for the hospital management of adult epistaxis. The ENT-UK Clinical Audit and Practice Advisory Group and the BRS identified the necessity for a nationally accepted standard of care as epistaxis is the most common acute presentation to ENT departments, but no formal national guidance for its management exists. An INTEGRATE (The National ENT Trainee Research Network) committee of junior clinicians with two senior executives developed a consensus methodology and coordinated a multi-domain systematic review, the findings of which were reviewed by a multi-disciplinary consensus panel with the aim of generating management recommendations which are presented within the primary literature together with the level of evidence, and Grading of Recommendations Assessment, Development and Evaluation (‘GRADE’) score to demonstrate the strength of the recommendation considering both the evidence and perceived benefit and harm.

A summary of the key recommendations are presented, according to review topic, as follows. Full details of level and quality of evidence, basis and strength of recommendation can be found in the tables within the main article:

1. Initial Assessment
   a) Initial assessment should incorporate:
      - An ‘ABC’ approach to the patient
      - Should be conducted in a location with appropriate facilities to assess, resuscitate and perform initial management (e.g. emergency department)
      - Should be conducted by a competent practitioner who has undergone epistaxis-specific training and has relevant experience
      - An oral ice pack as a first aid measure should be considered
      - Application of direct nasal pressure as a first aid measure should be considered
   
   b) The below patient factors may affect outcome, and their presence or absence should be recorded:
      - Duration of epistaxis
      - History of each of the following: sustained ambulatory hypertension, diabetes mellitus, bleeding diatheses, ischaemic heart disease, anticoagulation, antiplatelet therapy.
      - Site of bleeding: anterior or posterior
   
   c) Regarding investigations:
      - There are no routine investigations
- Threshold for requesting full blood count &/or venous blood gas to estimate Hb concentration should be low
- ‘Group & Save’ should be considered on individual case basis
- Coagulation studies should be reserved for patients taking anticoagulant medication, or those with confirmed or suspected bleeding diatheses
- In all patients, an attempt should be made to locate the site of bleeding with nasal decongestion followed by anterior rhinoscopy with headlight.
- All other investigations should be considered on a case-by-case basis

2. Cautery
   a) Cautery should be considered as a first-line treatment for all acute epistaxis, as it is associated with lower recurrence for rates and pain score as compared with packing, reduced admission rates and length of stay, and offers a potential economic benefit.

   b) A vasoconstrictor should be used prior to cautery unless contraindicated. Cautery should only be performed on a visually identified bleeding point by an appropriately trained and experienced practitioner.

   c) Electrocautery should be used in preference to silver nitrate by a suitably trained and experienced practitioner, where available. Electrocautery is associated with lower treatment failure and recurrence rates, reduced nasal packing and hospital admission rates and a lower pain score.

   d) If a bleeding point is not identified on anterior rhinoscopy, rigid endoscopy or microscopy should be performed by a suitably trained and experienced practitioner.

3. Intranasal agents
   a) Regarding non-dissolvable anterior nasal packs:
      - These should be considered when
        o Uncontrolled bleeding persists despite first aid measures
        o Cautery has been attempted or is considered inappropriate
        o The patient is geographically distant from specialist services, and cautery is not within local expertise.

      - Should be inserted by a care provider specifically trained and experienced in their use.
      - Rapid Rhino and Merocel packs are equally as effective as haemostatic interventions, therefore both are advocated.
      - Rapid Rhino are preferred to Merocel as they are associated with less discomfort on insertion and removal.
      - Systemic antibiotics are not routinely required whilst these packs are in situ.

   b) Regarding non-dissolvable posterior nasal packing:
- Evidence to support routine antibiotic cover whilst these packs are in situ is insufficient
- Combined posterior and anterior nasal packs should be considered where a posterior bleed is suspected, and anterior packs have been unsuccessful at achieving haemostasis

c) Regarding all non-dissolvable packs
- These should be removed within 24 hours of insertion (within daylight hours) if no evidence of active bleeding, regardless of anticoagulation status
- Following pack removal, all patients should undergo attempted targeted cautery of identified bleeding points using anterior rhinoscopy. If the bleeding point is not identified, proceed to microscopy or rigid endoscopy.
- Aim to discharge clinically stable patients at 4 hours following pack removal and cautery.

d) Regarding dissolvable intranasal packs and haemostatic agents:
- consider as therapeutic adjuncts following successful intranasal cautery or endoscopic surgery
- consider as an alternative to non-dissolvable packs in refractory cases where first aid and attempted cautery have been unsuccessful.
- There is insufficient evidence to recommend any particular dissolvable pack or haemostatic agent over another.
- Admission is not required for patients with dissolvable packs or haemostatic agents in situ, unless there are specific concerns regarding safety of discharge.

4. Antithrombotic therapy recommendations
Only consider permanent cessation of any antithrombotic in refractory cases where full assessment of risk and benefit has been considered in liaison with haematologists and/or primary care provider

a) Warfarin:
- In the stable patient with adequately controlled bleeding where the INR is within therapeutic range, reversal is not routinely required.
- Follow SIGN 129 Guidance – Antithrombotic: Indications and Management where appropriate (see text box)\(^1,10\)

b) DOACs:
- In the stable patient with adequately controlled bleeding DOACs do not need to be stopped or reversed
- There should be a low threshold for seeking case-specific guidance from haematologists when managing bleeding epistaxis

c) Heparin and heparinoids:
- In the stable patient with adequately controlled bleeding these do not need to be stopped or reversed
- British Committee for Standards in Haematology (BCSH) guidelines state that, in management of bleeding, cessation of treatment and general haemostatic measures is usually sufficient. Protamine may be utilised as a reversal agent where clinically indicated.1,11
- There should be a low threshold for seeking case-specific guidance from haematologists when managing bleeding epistaxis

5. Antiplatelet Therapy
- Continue therapy in uncomplicated presentations
- In complicated or refractory cases decision to cease or withhold therapy should be made following full assessment of risk and benefit, and discussion with haematologists, cardiology and primary care providers.

6. Transfusion
- In bleeding epistaxis there should be a low threshold to seek case-specific guidance from haematologists
- Follow BCSH guidelines where appropriate (see text box)1,12

7. Tranexamic acid use
- Contradictory evidence regarding use of oral tranexamic acid – not recommended
- Inconsistent evidence regarding topical tranexamic acid use with no long-term improvement in outcomes demonstrated – not recommended
- Follow BCSH guidance1,10 on use of IV tranexamic acid where antifibrinolytics are not contraindicated – 1g IV over 10 minutes as soon as possible after the injury, followed by maintenance infusion of 1g over 8 hours
- Consider IV tranexamic acid in non-traumatic major bleeding

8. Surgery and Interventional Radiology
Both surgery and interventional radiology are effective and treatment modality should be appropriate to the individual case and locally available expertise and services. Consider when conservative management as failed, such as in the following clinical scenarios:
- ongoing uncontrolled epistaxis despite conservative management
- where haemostasis is achieved through optimal intranasal packing, but bleeding recurs on attempted removal (if packing is considered suboptimal, repacking with case-appropriate pack should be undertaken if considered acceptable)
- recurrent epistaxis which is successfully treated temporarily with conservative measures; semi-elective surgery may be appropriate to minimize future risk

Surgery is considered the escalation management strategy of choice where conservative treatment has failed. Optimum surgery confers general anesthesia with endoscopic examination, electrocautery, and ligation or bipolar diathermy to all branches of the sphenopalatine artery on the affected side.

Anterior ethmoidal artery ligation should be reserved for refractory bleeding where there is specific concern that this may be the bleeding point, such as in post-traumatic cases.

**SIGN 129 Guidelines (as supported by BCSH) – as appropriate to the management of epistaxis.**

*From The British Rhinological Society (BRS) multidisciplinary consensus recommendations provide evidence-based best practice guidelines for the hospital management of adult epistaxis.*

- Serious bleeding with INR >1.1: stop warfarin, & administer IV vitamin K (5–10 mg) & PCC (usually 30–50 IU/kg, but dose-adjusted according to INR (under haematologist supervision whenever possible)). Fresh frozen plasma (at least 15 ml/kg) may be used only if PCC is unavailable.

- Minor bleeding & supratherapeutic INR: interrupt warfarin, reintroducing at a lower maintenance dose when situation is under control. Administer oral or IV vitamin K (1.0–2.5 mg).

- No bleeding & supratherapeutic INR: interrupt warfarin, monitor INR, restart warfarin at lower dose when INR <5.0. Where perceived risk of bleeding is high (e.g. INR >8) or other risk factors for bleeding are present, consider oral vitamin K administration (1.0–2.5 mg)\(^1\),\(^{10}\)

**BCSH Guidelines – as appropriate to the management of epistaxis.**

*From The British Rhinological Society (BRS) multidisciplinary consensus recommendations provide evidence-based best practice guidelines for the hospital management of adult epistaxis.*

**Major haemorrhage defined as bleeding leading to heart rate of >110 bpm &/or SBP<90mmHg**

- Hospitals must have local major haemorrhage protocols with adaptations for specific clinical areas. Such protocols should be followed when appropriate.

- Optimum target Hb concentration in bleeding management is not established. However, updated European guidelines (20) recommend target Hb level of 70–90g/L. Patients with cardiorespiratory morbidity may require higher target of 80–90g/L.

- Fresh frozen plasma should be part of initial resuscitation in major haemorrhage in at least a 1 to 2 unit ratio with red cells until coagulation monitoring results are available. Once bleeding is under control, further FFP should be guided by lab result abnormalities, with transfusion trigger of prothrombin time &/or activated PTT >1.5 time normal level for a standard dose (e.g. 15–20mg/kg).

- Fibrinogen supplementation should be given if fibrinogen levels fall below 1.5g/L\(^{11}\),\(^{12}\)
References


