Title

NHS Evidence – Kidney Diseases and Male Urogenital Disorders: search strategies for Annual Evidence Updates

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Abstract

NHS Evidence - kidney diseases and male urogenital disorders is one of 34 online specialist collections provided by the National Institute for Health and Clinical Excellence (NICE). This particular specialist collection is managed by a team from Oxford University Health Care Libraries. As part of our Service Level Agreement we are committed to producing three Annual Evidence Updates (AEUs) per year. AEUs are defined as "… the incidence of high-quality research evidence over a specific time period for a particular health condition, as well as national documents (for example, Department of Health or NHS) relevant to the specialist collection's content development strategy". In 2009 alone, we have presented one AEU on male urinary incontinence (January 2009), one on pre and post renal failure, proteinuria and glomerular filtration rate (May 2009) and the third AEU, launched in December 2009, was on post lymphoproliferative disorders in renal transplant patients. The aim of this paper is to describe the methodology used by our team to retrieve and filter evidence for our Annual Evidence Updates in a field where there are comparatively few systematic reviews published. For example, we have had to include evidence at the level of case series for our latest AEU and we snowballed our search results to include references cited in the recent eMedicine and UpToDate articles under the careful guidance of our clinical leads. Particular emphasis is placed on the importance of following an evidence-based methodology when preparing the AEUs and on using the help and advice of a clinical lead. Examples of search methodologies will be discussed.

Introduction

From NeLH to NHS Evidence in one decade

The National electronic Library for Health went live in 1999 with the aim of providing "easy access to best current knowledge to improve health and health care, patient choice, and clinical practice" (Gray and de Lisignan, 1999; p.1476). A decade later, NHS Evidence replaced the National Library for Health, (which had in turn replaced the National electronic Library for Health). NHS Evidence went live in April 2009 to provide evidence-based health and social care information for healthcare professionals in England. The website can be found at www.evidence.nhs.uk.

NHS Evidence - kidney diseases and male urogenital disorders is one of 34 online specialist collections provided by the National Institute for Health and Clinical Excellence (NICE). The specialist collections cover all the major healthcare areas, from cancer to vascular, from child health to later life, and from commissioning to surgery, anaesthesia, perioperative and critical care.

Specialist collections

The specialist collections aim to be 'one stop shops' for users, providing free access to evidence on a 24/7 basis online. They contain links to all of the guidance, evidence, reference materials, CPD and other learning resources, and patient information relevant to a topic such as cancer, for instance. No log-ins are necessary to access the content. The idea is that busy healthcare professionals can search for something specific, such as "home haemodialysis", and quickly retrieve the most recently published top-level evidence. They can also browse the topic trees on the left hand side of the page to explore a subject. The specialist collections are, for the most part, managed by an information specialist and a clinical lead or similar specialist. We are community-focused and community-driven: all of the collections have an external reference group backing them and helping with decision-making processes such as what specific content to include to meet the information needs of the renal community, in our case, or the oncology community, in the case of the cancer specialist collection.

NHS Evidence – kidney diseases and male urogenital disorders: Target audience

The kidney diseases and male urogenital disorders specialist collection exists to support all those involved in interventions aimed at treating kidney disease in adults and children in NHS England, and all those involved in interventions aimed at treating males with urogenital problems in NHS England. It is also aimed at health care staff involved in male sexual health. The target audience is therefore very wide. It encompasses nephrologists/urologists, specialists, male sexual health specialists, service managers, renal/urological nurses, dialysis technicians, transplant co-ordinators and allied health professionals. Health care or medical librarians are also part of the target audience.

NHS Evidence – kidney diseases and male urogenital disorders: Background and management structure

Our specialist collection is managed by a team of five individuals. I spend 80% of my time working as the information specialist for this project, and my colleague Owen Coxall makes up the other 20% of a full-time person (the rest of our time is spent working as outreach librarians and staffing the help desk at the Oxford University Health Care Libraries). My line manager Linda spends about half a day per week managing the project over all, making sure that Owen and I are meeting our deadlines. We have two clinical leads: a renal clinical lead, and a urology surgeon to take care of the male urogenital disorders section. We report internally to the head of the Health Care Libraries, Donald Mackay, and externally to the NHS Evidence team and to our external reference groups. The kidney diseases specialist library went live in April 2007, and the male urogenital disorders content was added in June 2009. The site was relaunched as 'NHS Evidence – kidney diseases and male urogenital disorders' at the British Association of Urological Nursing conference in Torquay at the start of November last year.

Annual Evidence Updates

One of the specialist collections' unique selling points are Annual Evidence Updates (AEUs). AEUs are defined as follows:

> An Annual Evidence Update presents the incidence of high-quality research evidence over a specific time period for a particular health condition, as well as national documents (for example, Department of Health or NHS) relevant to the specialist collection's content development strategy.

Source: Guidance for conducting an Annual Evidence Update, version 1.5, September 2009.

Initially called National Knowledge Weeks when they were developed in 2006, AEUs help professionals to keep up to date with the latest evidence in a subject area, and all of the specialist collections have had consistently positive feedback from users about them.

The kidney diseases and male urogenital disorders specialist collection is contracted under our Service Level Agreement with the National Institute for Clinical Excellence to present three AEUs per year on the website. Two AEUs are on renal topics, pre- and post- renal failure, and one is on a topic relating to male urogenital disorders, urinary incontinence. We are now on our third AEU on Proteinuria and estimated Glomerular Filtration Rate, having launched the most recent one at the end of May 2010. We have now produced two AEUs on male urinary incontinence, in collaboration with the women's health specialist collection, and one on malignancies post renal transplant, which was possibly the most interesting from my personal perspective.

AEU Methodology

A major methodological issue for the information specialists who search for the high-level evidence for Annual Evidence Updates is that there is no one definition of a systematic review. We therefore tend to favour that used by the Cochrane collaboration:

> A review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review. Statistical methods (**meta-analysis**) may or may not be used to analyse and summarise the results of the included studies.

Source: The Cochrane Collaboration. Glossary of Cochrane Collaboration and research terms. Available at: http://www2.cochrane.org/resources/glossary.htm (Accessed 26/03/10).

The challenge for our specialist collection is to retrieve and filter evidence for our Annual Evidence Updates in a field where there are comparatively few systematic reviews published. For example, I have used the SIGN systematic review filter to search Cinahl, and the Clinical Evidence systematic review search filters to search Medline and Embase for high-level evidence on renal topics. Sifting results using the Cochrane Collaboration definition, we have retrieved 45 renal systematic reviews and meta-analyses published in 2006, 108 published in 2007, 132 from 2008, and 216 from 2009. The numbers of high-quality evidence in nephrology are therefore increasing year-on-year, yet not for our AEU topics, which is why we have had to include evidence down to the level of case series for the AEUs on Proteinuria and eGFR presented in May 2008, 2009 and 2010.

Example 1: Proteinuria and eGFR

Testing the urine for proteinuria provides information about the health of the kidneys, indicating kidney function, as it indicates the amount of protein that the kidneys are 'leaking' when urine is produced. The estimated glomerular filtration rate is the gold standard kidney function measurement. Both are therefore used to test for and diagnose chronic kidney disease, so that the appropriate treatment and management can be prescribed to patients.

Evidence has been retrieved for the 2009 and 2010 AEUs on Proteinuria and eGFR using this same methodology:

Methodology:

MEDLINE and Embase were searched for systematic reviews and meta-analyses published between April 2008 and April 2009, using the Clinical Evidence systematic review search filter and the search strategies employed by the kidney diseases team in 2008.

Additional references, such as the RCTs, were retrieved using the subject search strategy without the systematic review search filter.

The following search terms were used for **Proteinuria**:

1. *PROTEINURIA/
2. exp ALBUMINURIA/
3. "urinary protein".ti,ab

4. "urine protein".ti,ab
5. "urinary albumin excretion".ti,ab
6. "urine albulmin excretion".ti,ab
7. microalbuminuria.ti,ab
8. macroalbuminuria.ti,ab
9. proteinuria.ti,ab

The following search terms were used for **eGFR**:

1. *GLOMERULUS FILTRATION RATE/
2. "estimated glomerular filtration rate".ti,ab
3. "estimating glomerular filtration rate".ti,ab
4. "estimated gfr".ti,ab
5. "estimating gfr".ti,ab
6. egfr.ti,ab

Results

Numbers of systematic reviews/ meta-analyses published April 2008- April 2009:

1. Basic science

1 a) Characterisation and description of urinary protein excretion in health and in disease [10 systematic reviews (SR)]
1 b) Tubular toxicity of urinary protein [1 SR]
1 c) Urinary proteomics [1 SR]

2. Clinical aspects

2 a) How to detect and quantify urinary albumin and proteinuria [0 SRs]
2 b) Proteinuria as a marker of chronic kidney damage [4 SRs]
2 c) Proteinuria as a marker of CVD [4 SRs]
2 d) Proteinuria as a screening tool [8 SRs]
2 e) eGFR as a marker of renal function [1 SR]
2 f) eGFR as a screening tool [1 SR]

3. Management

3 a) How early should active management of proteinuria or reduced eGFR be started? [4 SRs]
3 b) Managing cardiovascular risk factors in chronic kidney disease [22 SRs]
3 c) Preventing new onset development of proteinuria in people with diabetes and hypertension [9 SRs]
3 d) Preventing new onset development of proteinuria in people with CKD [27 SRs]

The team has relied heavily on the expertise of the past and present clinical leads, Dr Edward Sharples and Dr David Goldsmith, in sifting and critically appraising the evidence, and in writing commentaries on systematic reviews, RCTs, and NICE guidelines relating to this topic.

Example 2: Post Transplant Lymphoproliferative Disorders post renal transplant

Having a kidney transplant is often the most effective treatment in patients with a kidney disease. Unfortunately, having a new kidney can lead to other problems, as the immunosuppressant drugs patients take lead to immune problems. Lymphoproliferative disorders occur when lymphocytes are produced in large quantities. Post Transplant Lymphoproliferative Disorders are more likely to occur within the first year post-transplantation. The incidence could be as high as occurring in 10% of all solid organ transplant recipients (British Committee for Standards in Haematology, 2008; p. 9).

For the 2009 AEU on Post Transplant Lymphoproliferative Disorders Post Renal Transplant, we could not limit our search to systematic reviews and meta analyses. Instead, I searched Medline, Embase and the Transplant Library for papers on ptld, "post transplant lymphoproliferative disorder', or the thesaurus terms for PTLD or Epstein-Barr virus, and combined these results with *KIDNEY TRANSPLANTATION (see below for the methodology in full). We also snowballed our search results to include references cited in the recent eMedicine and UpToDate articles under the careful guidance of the clinical leads.

Methodology:

We have retrieved the references on the presentation, diagnosis and treatment of PTLD for the 2009 Annual Evidence Update by searching Medline, Embase and the Transplant Library, and cross-referencing using the recent BTS Guidelines on the surveillance, diagnosis and management of PTLD in adult solid organ transplant recipients, and the eMedicine and UpToDate articles on PTLD.

Databases searched:

- Medline
- Embase
- The Transplant Library

Period of Search:

- 2004 - 2009

Search Strategy:

(ptld.ti,ab OR "post transplant lymphoproliferative disorder*" OR exp *LYMPHOPROLIFERATIVE DISORDERS/ OR exp *EPSTEIN-BARR VIRUS INFECTIONS/ OR exp *HERPESVIRUS 4, HUMAN/)

AND

((renal OR kidney OR nephr*) OR (exp *KIDNEY TRANSPLANTATION/)

Inclusion Criteria:

Included articles had to meet the following criteria:

- Publication types other than letters, commentaries or case reports.
- Relevancy to topics included in the 2009 AEU.

Drs David Goldsmith and Edward Sharples sifted the references independently, including references from the following sources where relevant:

- British Committee for Standards in Haematology. Guidelines on the Surveillance, Diagnosis and Management of Post-Transplant Lymphoproliferative Disorders in Adult Solid Organ Transplant Recipients. British Journal of Haematology. 2008; 147, 22–42.
- Mukherjee S, Prendergast M [Internet]. eMedicine: Posttransplant Lymphoproliferative Disease [updated 2008 Oct 22; cited 2010 Apr 30]. Available from: http://emedicine.medscape.com/article/431364-overview
- Friedberg JW, Jessup M, Brennan DC [Internet]. UpToDate: Lymphoproliferative disorders following solid organ transplantation. UpToDate [updated 2010 Jan 23; cited 2010 Apr 30]. Available from: http://uptodateonline.com

It must be noted that we had a positive response to this AEU from members of our renal External Reference Group via email and an online survey, which was encouraging!

The future for Annual Evidence Updates

A new NHS Evidence working group has been formed to create a Methodology for the production of Evidence Updates in 2010, to prevent inconsistencies in the presentation, expert commentaries and the dissemination of AEUs across the specialist collections. The group aims to work with stakeholders and specialist collection teams to develop, test and pilot this methodology.

Conclusion

Annual Evidence Updates usually consist of the high-level evidence, systematic reviews and meta-analyses, published in the previous year on a particular topic such as Proteinuria and estimated Glomerular Filtration Rate. For the kidney diseases and male urogenital disorders specialist collection, we have had to adapt our methodology to take evidence from the lower levels of the evidence hierarchy, and use references from other evidence-based resources to add to our search results on topics such as Post Transplant Lymphoproliferative Disorders Post Renal Transplant. We hope to put the most recent NHS Evidence AEU methodology guidance into practice as soon as it is available later this year.

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