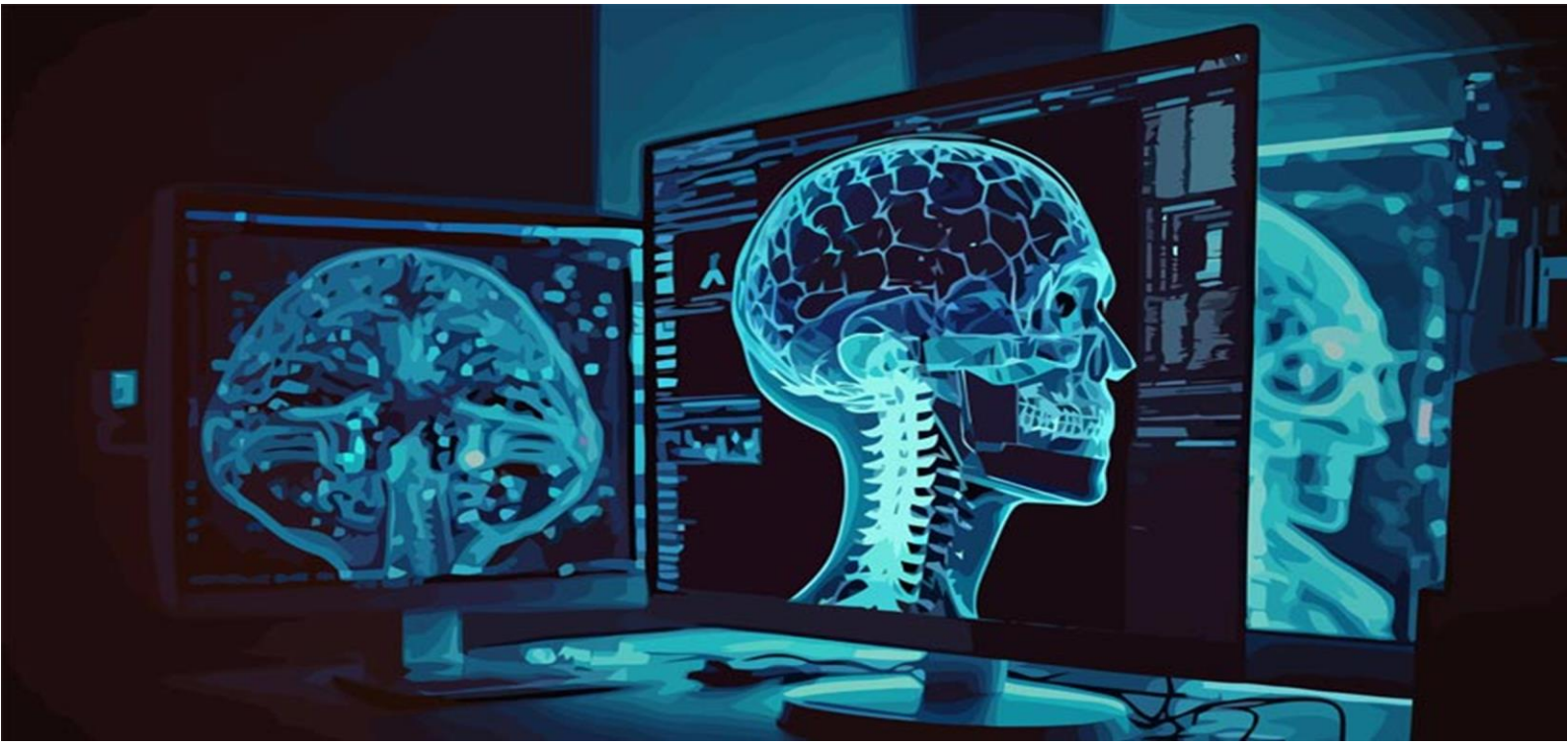
Cochrane Cameroon



International Day of Radiology

8 November 2024

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EDITORIAL

The International Day of Radiology is celebrated each year on November 8; a day which highlights the importance of medical diagnosis and the treatment of patients. In 2024, this day continues to raise awareness regarding essential inputs from radiologists and medical imaging technologies such as X-rays, computed tomography (CT), magnetic resonance imaging (MRI) and ultrasound in the healthcare sector.

This year could focus on technological innovation and how progress in radiology promote more accurate diagnoses, more effective follow-up and better adapted treatments. This may potentially correspond to themes such as Artificial Intelligence which is gaining more popularity in the field of radiology. The International Day of Radiology, celebrated every 8 November, highlights the importance of radiology in the medical diagnosis and care of patients.

The day invites radiology professionals, as well as patients and the general public, to mobilize in recognition and celebration of the discipline's contributions to public health. This year, participants are encouraged to share their experiences on social networks using the hashtag **#IDoR2024** to further promote radiology on a global scale.

Related to your research, this day could also represent an opportunity to explore and disseminate knowledge about the use of AI in training medical imaging residents, a rapidly evolving field that impacts quality of care and decision-making in the hospital setting.

Why was this summary produced?

To provide up-to-date evidence on stroke prevention and treatment.

What is a systematic review?

A summary of studies that answers a clearly formulated question and uses systematic and explicit methods to identify, select and critically appraise relevant studies. Data from different studies are extracted and can be analysed together using meta-analysis techniques.

THE CASE OF RADIOLOGY IN CAMEROON

In Cameroon, this event is an opportunity to raise awareness among the public and healthcare professionals of the importance of radiology in the diagnosis and treatment of illnesses, particularly complex pathologies and medical emergencies.

Activities organised for the day include conferences, workshops and presentations on technological advances in radiology, such as artificial intelligence and advanced imaging, which play a crucial role in medical diagnosis. In Cameroon, these events also provide an opportunity to highlight local challenges, including the lack of adequate equipment, the need for ongoing training for radiologists, and the importance of patient safety in radiology.

Institutions such as the Société Camerounaise de Radiologie (SCR) and referral hospitals such as the Central Hospital of Yaounde often take part in this celebration. It is also a key moment to take stock of access to medical imaging services and to encourage the authorities to invest more in radiological infrastructure, especially in remote areas of the country.

The International Day of Radiology is therefore a platform for raising awareness and lobbying for better use of medical imaging in Cameroonian healthcare.

SUMMARY OF SYSTEMATIC REVIEWS

1. Surgery or radiological treatment for varicoceles in subfertile men

Background

A varicocele is a dilatation (enlargement) of the veins along the spermatic cord (the cord suspending the testis) in the scrotum. Dilatation occurs when valves within the veins along the spermatic cord fail and allow retrograde blood flow, causing a backup of blood. Surgical treatment involves the closing off of the vessels, typically with sutures or clips. Radiological treatment involves both embolisation, in which the vessel is blocked with small particles, or sclerotherapy, where an agent is administered that damages the vessels, causing them to shrink. The mechanisms by which varicoceles might affect fertility, or the mechanisms by which surgical or radiological treatment of varicoceles might restore fertility, have not yet been explained.

Review question

We reviewed the evidence for the effect of varicocele treatment on live birth, adverse events, pregnancy rate, varicocele recurrence, and quality of life in subfertile couples where the male has a varicocele, and the female partner of childbearing age has no fertility problems.

Study characteristics

We found 48 randomised controlled trials (a type of study in which people are assigned to one of two or more treatment groups using a random method) comparing treatment versus no treatment or versus a different treatment method in a total of 5384 men. The evidence is current to April 2020.

Key results

We are uncertain whether surgical or radiological treatment improves live birth rates when compared to no treatment. Treatment may improve pregnancy rates compared to delayed or no treatment. The evidence suggests that couples with no or delayed treatment have a 21% chance of pregnancy, whilst the pregnancy rate after surgical or radiological treatment is between 22% and 48%. Data were lacking on adverse events, varicocele recurrence, and quality of life.

We are uncertain about the effect of surgical versus radiological treatment on live birth, pregnancy rate, varicocele recurrence, and the adverse event hydrocele formation. Data were lacking on quality of life for this comparison.

Microscopic subinguinal surgical treatment probably improves pregnancy rates slightly compared to other surgical treatments. This suggests that couples with microscopic subinguinal surgical treatment have a 10% to 14% chance of pregnancy after treatment, whilst the pregnancy rate in couples after other surgical treatments is 10%. This procedure also probably reduces the risk of varicocele recurrence. This suggests that 0.4% to 1.1% of men undergoing microscopic subinguinal surgical treatment experience

recurrent varicocele, whilst 1.4% of men undergoing other surgical treatments do. Results on adverse events were inconclusive. Data were lacking on live birth and quality of life.

We are uncertain about the effects of open inguinal surgical treatment versus retroperitoneal surgical treatment on adverse events, pregnancy rates, or varicocele recurrence. Data were lacking on live birth and quality of life.

We are uncertain about the effects of radiological treatment (sclerotherapy versus embolisation) on varicocele recurrence. Data were lacking on live birth, adverse events, pregnancy, and quality of life.

Certainty of the evidence

Our findings were inconclusive, as the certainty of the available evidence ranged from moderate to very low depending on outcome. More research is needed with live birth or pregnancy rate as the primary outcome.

Citation: Persad E, O'Loughlin CAA, Kaur S, Wagner G, Matyas N, Hassler-Di Fratta MR, Nussbaumer-Streit B. Surgical or radiological treatment for varicoceles in subfertile men. Cochrane Database of Systematic Reviews 2021, Issue 4. Art. No.: CD000479. DOI: 10.1002/14651858.CD000479.pub6.

2. Surgical and radiological interventions for treating symptomatic extracranial cervical artery dissection

Review question

This review was conducted to establish whether a surgical operation or a keyhole endovascular treatment, such placement of stent in addition to blood-thinning medication would improve outcomes in people with cervical artery dissection for whom treatment with blood-thinning medication alone does not improve persistent or worsening symptoms of stroke. The outcomes which we wished to assess are permanent brain damage and long-term disability from stroke.

Background

Cervical artery dissection is a tear in the wall of the blood vessels in the neck that supply blood to the brain. There are two of each artery, a carotid artery on the right and one on the left of the neck, and a vertebral artery on the right and one on the left of the neck. When tears occur in the walls of these arteries, clots can form inside the artery. These clots can then break away from the artery wall and travel to the brain to cause a stroke. The standard way of treating tears in these arteries is to give patients medications which thin the blood and reduce clot formation. However, sometimes patients continue to get symptoms of stroke, and their condition worsens despite being on maximum dose medication.

Search date

We performed a thorough and comprehensive review of the literature to look for clinical trials which could help us to answer the review question. The evidence is current to March 2020.

Study characteristics

We looked for trials which were conducted in an objective way and designed specifically to compare either surgery or radiological intervention to medical therapy alone.

Key results

We did not find any trials that matched the criteria of the review. Therefore, there is no available objective evidence that an operation or a radiological procedure can benefit patients who continue to have symptoms of stroke despite medical therapy. We did find a number of reports from experienced groups of doctors that operations and radiological interventions were safe in their hands. However, we found no evidence that this could be applicable to other hospitals and clinical teams. Therefore, large scale, well-conducted studies are required to answer the review question.

Certainty of the evidence

There is no good quality evidence to guide clinicians on the best treatment for people with cervical artery dissection who remain symptomatic despite optimal medical therapy.

Citation: Hynes N, Kavanagh EP, Sultan S, Jordan F. Surgical and radiological interventions for treating symptomatic extracranial cervical artery dissection. Cochrane Database of Systematic Reviews 2021, Issue 2. Art. No.: CD013118. DOI: 10.1002/14651858.CD013118.pub2.

3. How accurate are asking about symptoms and doing a chest X-ray to screen for tuberculosis of the lungs among adults who are HIV-negative or with unknown HIV status?

Why is improving screening for tuberculosis of the lungs important?

Systematic screening in settings where tuberculosis is common is a recommended strategy for early detection of tuberculosis. Screening helps identify people who are more likely to have tuberculosis so they can have confirmatory testing. These are additional tests to confirm the presence of *Mycobacterium tuberculosis*, the bacterium that causes tuberculosis. Asking about tuberculosis symptoms (for example, cough, coughing up blood, fever, and fatigue) and doing a chest X-ray (CXR), which shows lung abnormalities, are commonly used screening methods. Tuberculosis is treatable with antibiotics, which means that early detection may result in lower mortality and morbidity, less transmission of tuberculosis, and more equitable access to care.

Not recognizing lung tuberculosis when it is present (a false-negative result) may result in delayed treatment and further transmission. Conversely, a screening result that is thought to be positive while it is not may result in unnecessary confirmatory tests, which burdens both the individual and the public health system.

Knowing how often screening tests lead to false-positive and false-negative results – this is called accuracy - may help in choosing a screening method.

What is the aim of this review?

To find out how accurate asking about symptoms and CXR are as screening tests for lung tuberculosis in adults with unknown or negative HIV status.

What was studied in the review?

We studied the accuracy of three types of symptom questions: (i) cough for two or more weeks, (ii) cough of any duration, and (iii) any tuberculosis symptom. For CXR, we studied two definitions for a positive result: (i) any CXR lung abnormality and (ii) CXR

lung abnormalities suggestive of tuberculosis. The results are interpreted by staff trained in radiology.

What are the main results in this review?

The review included 59 studies, of which 48 reported on one or more symptom screening questions and 37 reported on CXR.

The results below indicate a situation in which five individuals (0.5%) have lung tuberculosis among a group of 1000 screened individuals.

Cough for two weeks or more: if 1000 individuals were screened, 58 would screen positive, meaning they report cough for two weeks or more and, of these, 56 (97%) would not have lung tuberculosis. Of 1000 individuals, 942 would screen negative, meaning they do not report cough for two weeks or more and, of these, three (0.3%) would have lung tuberculosis.

Cough of any duration: of 1000 individuals, 127 would screen positive and, of these, 124 (98%) would not have lung tuberculosis. Of 1000 individuals, 873 would screen negative and, of these, two (0.2%) would have lung tuberculosis.

Any tuberculosis symptom: of 1000 individuals, 351 would screen positive and, of these, 348 (99%) would not have lung tuberculosis. Of 1000 individuals, 649 would screen negative and, of these, one (0.2%) would have lung tuberculosis.

Any CXR lung abnormality: of 1000 individuals, 113 would show lung abnormalities on CXR and, of these, 108 (96%) would not have lung tuberculosis. Of 1000 individuals, 887 would not show lung abnormalities and, of these, no one (0%) would have lung tuberculosis.

CXR lung abnormalities suggestive of tuberculosis: of 1000 individuals, 48 would screen positive and, of these, 44 (92%) would not have lung tuberculosis. Of 1000 individuals, 952 would screen negative and, of these, one (0.1%) would have lung tuberculosis.

How reliable are the results of the studies in this review?

In the included studies, the diagnosis of tuberculosis was made by assessing the study participants with confirmatory tests (the reference standard). This is the best available method for deciding whether participants really had lung tuberculosis.

However, there were problems with how the studies were conducted. In many studies, those without symptoms or CXR abnormalities were not tested with a confirmatory test. Therefore, the numbers of those without symptoms or CXR abnormalities, but nevertheless having tuberculosis (people who tested falsely negative), may have been underestimated in these studies. Consequently, screening for symptoms or CXR abnormalities might appear more accurate than it really is.

In addition, results from individual studies included in the review varied, for example, because of regional variation. Therefore, we cannot be sure that screening for symptoms and CXR abnormalities will always have the same accuracy.

What are the implications of this review?

The results of the review suggest that screening for tuberculosis with symptom questions or CXR might result in a high yield of persons with tuberculosis disease. However, this screening might also result in a high proportion of persons without the disease screening

positive. Additional considerations for the best design of screening programmes include the local epidemiological situation, availability and accessibility of CXR, and the need for confirmatory tests.

How up to date is this review?

The review authors searched for and included studies published from 1 January 1992 to 10 December 2018. A repeat of the search to 2 July 2021 revealed no further studies that would inform the results of the analysis.

Citation: Van't Hoog A, Viney K, Biermann O, Yang B, Leeflang MMG, Langendam MW. Symptom- and chest-radiography screening for active pulmonary tuberculosis in HIV-negative adults and adults with unknown HIV status. Cochrane Database of Systematic Reviews 2022, Issue 3. Art. No.: CD010890. DOI: 10.1002/14651858.CD010890.pub2.

4. Surgery or radiological treatment for varicoceles in subfertile men

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