Malaria: a far greater threat to children in Africa than covid-19

Large scale seasonal malaria chemoprevention (SMC) given to children under 5 years old, was effective in reducing morbidity and mortality from malaria in west and central Africa, according to this important observational evaluation of the ACCESS-SMC project. Serious adverse reactions were rare or rarely reported. Despite challenges of supply and distribution, 90% of children received at least one treatment, more than 50% of children received all four treatments per year, and the death rate from malaria fell by 42-57% in areas of SMC intervention. Resistance to sulfadoxine-pyrimethamine and amodiaquine were uncommon, but ongoing monitoring is needed as malaria remains a major threat in sub-Saharan Africa, where it will kill far more people, many of them children, than covid-19 will this year.

Lancet doi:10.1016/S0140-6736(20)32227-3

Flu jabs: high dose trivalent no better than standard dose quadrivalent

Reducing flu in a high risk population over 65 years old leads to fewer hospitalisations and deaths from cardiovascular and respiratory illness. But is a high dose trivalent flu vaccine better than the standard dose quadrivalent one? This pragmatic, randomised trial of individuals at high cardiovascular risk (recent myocardial infarction or admission with heart failure) enrolled over three flu seasons found that high dose trivalent inactivated influenza vaccine did not significantly reduce the composite end point of all cause death or hospitalisations for cardiac or pulmonary causes compared with standard dose quadrivalent inactivated influenza vaccine. The high dose vaccine unsurprisingly caused more vaccine related adverse effects, although severe events were rare and similar in both groups.

An important caveat is that there was no laboratory confirmation of flu in this pragmatic trial, so whether it was reduced in this population remains unknown. There was also no unvaccinated control group as flu vaccination is strongly recommended in this high risk group, so not offering vaccination at all would be considered unethical.


“Payment delinquency” precedes dementia diagnosis by up to six years

People who live on their own start to have problems managing their financial affairs—including keeping up with bill payments—for several years before a diagnosis of Alzheimer’s disease and related dementias (ADRD) is made. This large, retrospective, secondary data analysis of consumer credit report outcomes from 1999 to 2018 linked to Medicare claims data found a small but significantly higher risk of “payment delinquency” (missed payments) among those who went on to develop ADRD within the next six years compared with matched controls who didn’t. The difference increased in the quarter after diagnosis. I’m not sure what this study adds to the sum of human knowledge; the difference is small, and most people who care for or about an older relative will already be aware of the risk of financial vulnerability.


The ongoing quest for better covid treatments

Remdesivir, hydroxychloroquine, lopinavir, and interferon had no significant effect on overall mortality, initiation of ventilation, or duration of hospital stay in hospitalised patients with covid-19 according to the open label interim WHO Solidarity trial. The results are disappointing, but the organisation of this global study is awe inspiring: 11 330 patients in 405 hospitals in 30 countries were enrolled from March to October of this year. And its efficient factorial design and recruitment of 2000 patients per month mean that the Solidarity trial is well set up to assess further treatments such as immunomodulators and monoclonal antibodies to SARS-CoV-2 virus. The overall risk of death to day 28 was 11.8%, with no significant impact attributable to any of the drugs studied.


Steroids in rheumatoid arthritis associated with severe infection

A large retrospective cohort study has shown that long term, low dose glucocorticoids were associated with an increased risk of hospitalisation due to serious infection in patients with rheumatoid arthritis who had been taking disease modifying antirheumatic drugs for more than six months. The increased risk was dose dependent and apparent even at low doses of ≤5 mg a day. Two major limitations of this study are the possibility of misclassification of the dose of glucocorticoids and the risk of residual confounding in this type of study. Consensus on the role of glucocorticoids in rheumatoid arthritis remains elusive, although there is general agreement that the aim is to give the lowest possible dose for the shortest possible time.

Ann Intern Med doi:10.7326/M20-1594

Ann Robinson is an NHS GP and health writer and broadcaster.
Remdesivir for covid-19: a WHO guideline

Clinical question What is the role of drug interventions in the treatment of patients with covid-19?

New recommendation The latest version of this WHO living guidance focuses on remdesivir, following the 15 October 2020 preprint publication of results from the WHO SOLIDARITY trial. It contains a weak or conditional recommendation against the use of remdesivir in hospitalised patients with covid-19.

Recommendations The first version on this living guidance focused on corticosteroids. The strong recommendation for systemic corticosteroids in patients with severe covid-19 are unchanged.

Understanding the new recommendation The guideline panel emphasised the evidence suggesting no important effect on mortality, need for mechanical ventilation, time to clinical improvement, and other patient-important outcomes. Considering the low or very low certainty evidence for all outcomes, the panel interpreted the evidence as not proving that remdesivir is ineffective; rather, there is no evidence based on currently available data that it does improve patient-important outcomes. The panel placed low value on small and uncertain benefits in the presence of the remaining possibility of important harms. In addition, the panel considered contextual factors such as resources, feasibility, acceptability, and equity for countries and health care systems.

Readers note This second version is update 1 of the living guideline published on 20 November 2020 (BMJ 2020;370:m3379). When citing this article, consider adding the update number and date of access for clarity.

This living guideline responds to emerging evidence from randomised controlled trials (RCTs) on existing and new drug treatments for covid-19. More than 2800 trials on covid-19 interventions have been registered or are ongoing. This rapidly evolving evidence landscape requires trustworthy interpretation and expeditious clinical practice guidelines to inform clinicians, patients, governments, ministries, and health administrators.

A living network meta-analysis associated with this guideline will incorporate new trial data as the evidence base increases and allow for analysis of comparative effectiveness of multiple covid-19 treatments. This network meta-analysis and other related publications are included in the box. The infographic provides a summary of the new recommendations.

What triggered this version of the guideline?

This second version of the WHO living guideline addresses the use of remdesivir in patients with covid-19. It follows the preprint publication of the WHO SOLIDARITY trial on 15 October 2020, reporting results on treatment with remdesivir, hydroxychloroquine, and lopinavir-ritonavir in hospitalised patients with covid-19. The role of these drugs in clinical practice has remained uncertain, with limited prior trial evidence. The WHO SOLIDARITY trial adds 11 266 randomised patients (2570 to remdesivir, 954 to hydroxychloroquine, and 1411 to lopinavir-ritonavir, 6371 to usual care) and holds the potential to change practice.

Remdesivir is a novel monophosphoramidate adenosine analogue prodrug which is metabolised to an active tri-phosphate form that inhibits viral RNA synthesis. Remdesivir has in vitro and in vivo antiviral activity against several viruses, including SARS-CoV-2. Remdesivir is widely used in many countries, with several guidelines recommending its use in patients with severe or critical covid-19.
Visual summary of recommendations

Population
These recommendations apply only to people with these characteristics:

Patients with confirmed covid-19

Disease severity

Non-severe

Severe

Critical

Absence of signs of severe or critical disease

SpO₂ <90% on room air

Respiratory rate >30 in adults

Raised respiratory rate in children

Signs of severe respiratory distress

Requires life sustaining treatment

Acute respiratory distress syndrome

Sepsis

Septic shock

Key practical issues

Remdesivir

Administration via intravenous infusion

Optimal timing, duration and dosing remain unclear

Not a significant inducer or inhibitor of CYP enzymes but should be monitored when co-administered with strong inducers or inhibitors

May be relatively costly, and there may be limited availability

Corticosteroids

Absolute contraindications for 7 to 10 day courses of corticosteroid treatment are rare

Recommended regimens are available globally, and relatively inexpensive

No clear differences in efficacy or adverse effects between different corticosteroids

In order to help guarantee access to therapy for severe and critical covid-19 patients, it is reasonable to avoid administering corticosteroids to patients who are less likely to derive benefit

Evidence profile

Remdesivir

Favours usual supportive care

No important difference

Evidence quality

Mortality

106

No important difference

96

Evidence profile

Mechanical ventilation

105

No important difference

95

Evidence profile

Serious adverse events

15

No important difference

15

Evidence profile

Viral clearance at 7 days

483

No important difference

498

Evidence profile

Acute kidney injury

56

No important difference

48

Evidence profile

Delirium

16

No important difference

19

Evidence profile

Time to clinical improvement

11.0

No important difference

9.0

Evidence profile

Hospitalisation duration

12.8

No important difference

12.3

Evidence profile

Mechanical ventilation duration

14.7

No important difference

13.4

Evidence profile

Corticosteroids

Favours usual supportive care

No important difference

Evidence quality

Mortality: critical illness

415

67 fewer

328

Evidence quality

415

67 fewer

328

Evidence quality

Mortality: severe illness

334

267

Mortality: non-severe illness

176

215

Gastrointestinal bleeding

48

51

Superinfections

186

188

Hyperglycaemia

286

332

Neuromuscular weakness

69

75

Neuropsychiatric effects

25

28

Evidence profile

Remdesivir

The panel concluded that most patients would not prefer intravenous treatment with remdesivir given the low certainty evidence. Any beneficial effects of remdesivir, if they do exist, are likely to be small and the possibility of important harm remains. They acknowledged, however, that values and preferences are likely to vary, and there will be patients and clinicians who choose to use remdesivir given the evidence has not excluded the possibility of benefit

Corticosteroids

The panel concluded that all or almost all fully informed patients with severe or critical covid-19 would choose to take corticosteroids. In considering potential contraindications, clinicians must determine if they warrant depriving a patient from a potentially lifesaving treatment

The panel concluded that most fully informed individuals with non-severe illness would not want to receive corticosteroids, but many could want to consider this intervention through shared decision-making with their treating physician. When treating patients with non-severe disease, even after 7 days of symptoms, the panel concluded that it was preferable to err on the side of no corticosteroids

Disclaimer: This infographic is not a validated clinical decision aid. This information is provided without any representations, conditions, or warranties that it is accurate or up to date. BMJ and its licensors assume no responsibility for any aspect of treatment administered with the aid of this information. Any reliance placed on this information is strictly at the user’s own risk. For the full disclaimer wording see BMJ’s terms and conditions: http://www.bmj.com/company/legal-information/

See an interactive version of this graphic online

The guidance for remdesivir

The recommendation addressing remdesivir was informed by results from a systematic review and network meta-analysis that pooled data from four randomised trials with 7333 participants hospitalised for covid-19. Of note, none of the included RCTs enrolled children or adolescents under the age of 19 years, and, although older people were included in the trials, their outcomes were not reported separately. Also, there is no pharmacokinetic or safety data on remdesivir for children. Given this, the applicability of this recommendation to children is currently uncertain.

Understanding the recommendation on remdesivir

We suggest against administering remdesivir in addition to usual care for the treatment of patients hospitalised with covid-19, regardless of disease severity (weak or conditional recommendation).

When moving from evidence to the conditional recommendation against the use of remdesivir for patients with covid-19, the guideline panel emphasised the evidence of possibly no effect on a range of patient-important outcomes, albeit of low certainty; it also noted the anticipated variability in patient values and preferences and other contextual factors, such as resource considerations, accessibility, feasibility and impact on health equity (see below).

Balance of benefit and harm

The panel found a lack of evidence that remdesivir improved outcomes that matter to patients such as reduced mortality, need for mechanical ventilation, time to clinical improvement, and others. There was no evidence of increased risk of serious adverse events in patients receiving remdesivir, at least from the included trials. Further pharmacovigilance is required to confirm this, as serious adverse events are commonly under-reported and rare events would be missed, even in large RCTs.

Data from the network meta-analysis indicated that a subgroup of people with non-critical disease might benefit from remdesivir. However, the panel judged the credibility in this subgroup analysis to be insufficient to make subgroup recommendations. Important factors influencing this decision included a lack of a priori hypothesised direction of subgroup effect by trial investigators, little or no previously existing supportive evidence for the subgroup finding, and relatively arbitrary cut points used to examine the subgroups of interest. The overall low certainty evidence for the benefits and harms of remdesivir, driven by risk of bias and imprecision limitations, also contributed to the judgement (see linked WHO guidance and MAGICapp for full details). The panel highlighted that, despite the conditional recommendation against remdesivir, they support further enrolment into RCTs evaluating remdesivir, especially to provide higher certainty of evidence for specific subgroups of patients.

Values and preferences

The panel inferred that most patients would be reluctant to use remdesivir given that the evidence left high uncertainty regarding effects on mortality and the other prioritised outcomes. This was particularly so as any beneficial effects of remdesivir, if they do exist, are likely to be small, and the possibility of important harm remains. The panel acknowledged, however, that values and preferences are likely to vary, and there will be patients and clinicians who choose to use remdesivir given that the evidence has not excluded the possibility of benefit.

Resource implications, feasibility, equity, and human rights

A novel therapy typically requires higher certainty evidence of important benefits than currently available for remdesivir, preferably supported wherever possible by cost-effectiveness analysis. In the absence of this information, the panel raised concerns about opportunity costs and the importance of not drawing attention and resources away from best supportive care or the use of corticosteroids in severe covid-19. It was noted that, currently, remdesivir is administered only by the intravenous route and global availability is limited.

Practical issues

Its use is contraindicated in those with liver dysfunction (ALT > 5 times normal at baseline) or renal dysfunction (eGFR < 30 mL/minute). To date, it can only be administered intravenously, and it has relatively limited availability.

Uncertainties

Here we outline key uncertainties for remdesivir identified by the guideline development group. These uncertainties may inform future research—that is, the production of more relevant and reliable evidence to inform policy and practice. These include effects on:

- Critical outcomes of interest, particularly those that impact resource allocation, such as the need for mechanical ventilation, duration of mechanical ventilation, and duration of hospitalisation
- Specific subgroups, such as different severities of illness, different time (days) since onset of illness, children and older adults, pregnant women, duration of therapy
- Long term outcomes (such as 1-year endpoint) examining mortality or long term quality of life
- Long term safety and rare but important side effects
- Patient-reported outcomes such as symptom burden
- Outcomes when used in combination with other agents such as, but not limited to, corticosteroids
- Impact on viral shedding, viral clearance, patient infectivity

Cite this as: BMJ 2020;370:m3379
Find the full version with references at http://dx.doi.org/10.1136/bmj.m3379
Remdesivir: a pendulum in a pandemic

New guidance challenges the drug’s use for patients with covid-19

In this issue, the World Health Organization living guideline on drugs for covid-19 is updated in response to interim results from the SOLIDARITY trial for repurposed antiviral therapies (p 451). In this version, the WHO and partners provide a weak recommendation against the use of remdesivir for patients with any severity of covid-19. This comes after the panel’s previous weak recommendation for remdesivir in patients with severe covid-19, which had been made with caveats: that uncertain clinical benefits and cost effectiveness of the agent may exacerbate existing health inequities, and that, given the uncertainty, active enrolment into ongoing randomised controlled trials should be continued.

Enter SOLIDARITY, a WHO sponsored, multinational, pragmatic, adaptive, open-label trial that randomised hospitalised patients to four repurposed antiviral therapies (hydroxychloroquine, remdesivir, lopinavir/ritonavir, interferon-$
\beta$1a) or standard care. The hydroxychloroquine, lopinavir/ritonavir, and interferon-$\beta$1a arms were discontinued for futility. Among the nearly 5500 patients randomised to remdesivir or standard care, no difference was observed in the primary outcome of in-hospital mortality. Moreover, there were no differences in secondary endpoints including deterioration to mechanical ventilation or time to discharge.

These data were a disappointment for clinicians who had been encouraged by a double-blind, placebo controlled trial (ACTT-1) in which hospitalised patients randomised to a 10 day course of remdesivir had a four day shorter recovery time compared with placebo. Mortality was not significantly different between remdesivir and placebo but hope remained that the larger SOLIDARITY trial would demonstrate a mortality benefit. Alas, it did not.

**Effectiveness in practice**

How can the results from ACTT-1 and the SOLIDARITY trial be reconciled? Although the double-blind design is typically taken as the gold standard for clinical trials, the open-label, pragmatic nature of SOLIDARITY provides insight into remdesivir’s effectiveness in clinical practice across the global community, which is of primary importance in a pandemic.

Universal application of the findings of either study outside the settings in which they were conducted is challenging; for example, the value of reducing time to recovery—a benefit shown convincingly in ACTT-1 but which SOLIDARITY was not optimally designed to evaluate—will vary globally and must be questioned in the context of substantial drug expense.

Finally, the benefits of remdesivir observed in ACTT-1 were seemingly driven by the subgroup of patients requiring only low flow supplemental oxygen at the time of enrolment. This benefit was not seen in the randomised controlled trial by Wang et al, in which the patient population largely comprised the subgroup demonstrating the greatest benefit in ACTT-1, although that study may have been underpowered. When the results of all four randomised, controlled trials of remdesivir are analysed collectively, we cannot accept the potential benefit of treatment in low risk patients without also acknowledging that remdesivir may cause harm in high risk patients.

Remdesivir was the best prospect among currently available antiviral therapies for covid-19. However, the equivocal findings to date are not enough to justify widespread use. The WHO’s new recommendation is scientifically and economically sound, as widespread use of remdesivir in hospitalised patients is unlikely to save lives, may hinder evaluation of other experimental therapies in clinical trials, and could be economically devastating.

The impact of these recommendations is likely to be uneven: use of remdesivir in the treatment of covid-19 was already very limited in the vast majority of countries due to supply constraints, high drug costs, and lack of evidence that it reduces mortality. However, there will be an uncomfortable reckoning in countries, such as the US, where remdesivir has become de facto standard care.

Given the complexity of covid-19 and a constantly shifting therapeutic landscape, the incremental benefits of various interventions including remdesivir, immunomodulating agents, ventilation strategies, and anticoagulation are still unknown across the spectrum of illness, and may not be known for years to come. The story of standard care for covid-19 is still being written. In the interim, the WHO guidance appropriately places remdesivir as a potential treatment that needs continued exploration in randomised trials.

Cite this as: BMJ 2020;371:m4560

Find the full version with references at http://dx.doi.org/10.1136/bmj.m4560
CLINICAL UPDATES

Assessment and management of shoulder dislocation

Lukas PE Verweij,1 2 3 David N Baden,4 Julia MJ van der Zande,5 Michel PJ van den Bekerom5 6

Full author details, see bmj.com
Correspondence to: LPE Verweij
l.p.verweij@amsterdamumc.nl

Shoulder dislocations are painful and have an impact on activities of daily living and participation in sports. Most shoulder dislocations (>95%) occur in the anterior direction and are usually the result of trauma.1 2 3 Optimal management can prevent recurrent dislocations and reduce social costs.4 5 6 Patients with first time dislocations often receive insufficient information to make a decision about their management.7 Shared decision making must take into consideration the patient’s preferences for surgery or physical therapy, their expectations, and the likelihood of recurrence.6 In this clinical update we present an initial approach for primary care and emergency healthcare providers to assess and manage patients with a traumatic anterior shoulder dislocation.

WHAT YOU NEED TO KNOW

• A traumatic first time anterior shoulder dislocation shows a peak incidence in men aged 16-20 and in women aged 61-70
• Refer patients with suspected dislocation to emergency services for reduction
• Risk of experiencing recurrent dislocation is greater in patients age ≤40, in men, and in people with hyperlaxity
• Immobilising the shoulder for one week is often recommended to reduce pain and prevent recurrence; however, the evidence for immobilisation duration is uncertain
• Young, active patients and those who participate in sports are more likely to benefit from operative treatment in contrast to older patients (without associated injuries) or patients with a low activity level, where conservative therapy may be sufficient

Who experiences a shoulder dislocation?

More than 70% of shoulder dislocations occur in men.1 3 In a cohort study of 16 763 patients who experienced a first time anterior dislocation in the UK, peak incidence was in men aged 16-20 (80.5 per 100 000 person years) and in women aged 61-70 (28.6 per 100 000 person years).3 These peak incidences are similar in other Western countries, such as Canada, the US, and Norway.2 3

In young patients, shoulder dislocations most often occur during participation in contact and overhead sports, such as rugby, football, and baseball.1 2 Shoulder dislocations in older patients are most often caused by a fall at home.2 The cause for the peak incidence in older women remains unclear.1 3

Posterior shoulder dislocation is less common, with an incidence of 1.1 per 100 000 person years, and approximately one third of dislocations occur following an atraumatic event, such as a seizure.8 Inferior shoulder dislocations (luxatio erecta) are rare and have only been described in case reports or small case series.

How do patients present?

Patients present with considerable pain and impaired motion following trauma involving the shoulder. The injured arm is slightly abducted and held by the other arm (fig 1), while bending forwards. A fall on the outstretched arm or a direct blow to the shoulder is the most common injury reported in a first time anterior dislocation, but any trauma to the shoulder can cause dislocation.9 10
How is it diagnosed?

The mechanism of trauma and symptoms provides important diagnostic clues.

On examination, a prominent acromion and asymmetry of the shoulder contour are seen on the injured side in anterior dislocation, as the humeral head has shifted front and downwards (anteroinferior, fig 1). In a posterior dislocation, the humeral head is not palpable anteriorly (fig 1). The impalpable humeral head and mechanism of injury can be diagnostic clues for a posterior dislocation.

In patients with suspected dislocation, request an anteroposterior and scapular ‘Y’ radiograph to determine the direction of the dislocation, confirm the diagnosis, and show possible fractures (fig 2). The Y radiograph uses a sagittal view where the scapula is shaped like a Y (fig 2). It can distinguish an anterior from a posterior or inferior dislocation. Fractures of greater tuberosity can be detected with high sensitivity (94%) and specificity (95%) using radiographs (fig 2).

What complications are associated with shoulder dislocation?

Neurological deficits, greater tuberosity fractures, and rotator cuff tears can accompany shoulder dislocation. Vascular damage is very rare. Fourteen per cent of traumatic anterior dislocations were accompanied by a neurological deficit, 16% by a greater tuberosity fracture, and 10% by a rotator cuff tear in a prospective trauma database study (3633 patients). The risk of greater tuberosity fractures and rotator cuff lesions increased with age and was most common in patients over 40. First time dislocation and high energy trauma (eg, a fall from height) increase the likelihood of associated fractures. Rotator cuff tears can be difficult to diagnose clinically. Persistent pain and inability to regain function following physiotherapy can result from a rotator cuff tear.

Assess for damage to neurovascular structures. Check radial pulse and capillary refill. Damage to motor neurons can be quickly assessed by asking the patient to extend the fingers (radial nerve), spread the fingers (ulnar nerve), and oppose the thumb (median nerve). Damage to the axillary nerve is characterised by shoulder pain, loss of sensibility on the lateral side of the upper arm (fig 3), and weakness of the deltoid muscle (abduction). Loss of sensibility is often resolved after reduction.

The risk of nerve injuries increases with age, associated fractures, and haematoma. Most patients recover spontaneously within one year and regain muscle strength and sensation, but range of motion may be slightly limited in the injured shoulder. Less than 1% of patients have persistent brachial plexus and peripheral nerve injuries beyond one year, according to a retrospective multicentre study (15 739 patients).

Reduction

Most techniques for shoulder reduction show a high success rate. No consensus exists regarding the most appropriate method. Frequently, more than one technique might be performed for a successful reduction. Hippocratic and Kocher methods are based on traction and leverage. Biomechanical techniques—such as scapular manipulation, “Fast, Reliable, and Safe” (FARES), and Cunningham—focus on muscle relaxation. The rotator cuff muscles are strained following a dislocation, and relaxing the muscles allows the humeral head to return to its original position. We recommend these techniques for shoulder reduction (table 2).

Scapular manipulation and FARES techniques were most successful in reducing the shoulder, with success rates of 97% and 92%, respectively, in a systematic review (1377 patients, nine randomised controlled trials and four comparative studies) on closed reduction techniques performed at emergency departments. These techniques were less painful (1.47 and 1.59 on a visual analogue scale of 1 to 10) compared with traction and/or leverage techniques (visual analogue scale >6). High quality evidence assessing the most successful and least painful technique is lacking.
What factors increase the risk of recurrence?

Up to 40% of patients experience recurrence (defined as a complete dislocation or subluxation) ≥12 months following a first time dislocation, according to a systematic review (10 cohort studies, 1324 patients). Young patients (≤40 years) are 13 times more likely, men are three times more likely, and patients with hyperlaxity are three times more likely to experience recurrence (table 1, bmj.com). Patients with a greater tuberosity fracture were less likely to experience recurrence. More than 85% of recurrent dislocations were experienced within two years in a prospective cohort study (252 patients aged <35 years).

What does long term management involve?

Offer referral to an orthopaedic specialist for further management as in criteria listed in the box.

Conservative management or surgery

Conservative management comprises physical therapy with scapula and rotator cuff training. A prospective cohort study with 25 years’ follow-up (255 patients) showed a recurrence rate of 60% with physical therapy. Surgery comprises arthroscopic repair of the capsule and labrum complex with/without tenomyodesis or a more invasive procedure in which a bone graft is added to the glenoid (bone augmentation). Recurrence is lower, but surgery can have complications. A systematic review (56 studies, 4336 patients) showed a pooled recurrence rate of 16% (2693 patients) following the labral repair, 9% (219 patients) following the labral repair with remplissage (tenomyodesis of the infraspinatus tendon), and 6% (905 patients) following the bone augmentation procedure. These recurrence rates are primarily based on patients receiving operative treatment following recurrent dislocations. Complications occurred in 5% of patients with bone augmentation compared with <2% for labral repair. Hardware failure, non-union/fracture of the graft, haematoma, and temporary nerve injury are common complications following bone augmentation procedures, and shoulder stiff ness is the most common complication following labral repairs.

Shared decision making

Weighing the benefits and risks of physical therapy and operative treatment following a first time dislocation can be challenging for patients and healthcare professionals. Participation in contact sports, such as rugby, football, basketball, and hockey increases the risk of recurrence.

Competing interests: None declared.

Cite this as: BMJ 2020;371:m4485

Find the full version with references at http://dx.doi.org/10.1136/bmj.m4485

Who to refer to an orthopaedic specialist

- Patients who experience a first time dislocation who may wish to consider both surgical and non-surgical options
- Athletes and active patients
- Patients with suspected neurovascular injuries
- Patients with a greater tuberosity fracture
- Where conservative treatment has been unsuccessful and the patient experiences recurrent dislocations
- Patients >40 with persistent pain who are unable to regain function (possible rotator cuff tear)

Immobilise the shoulder

Standard practice is to immobilise the shoulder following closed reduction to reduce pain and allow healing of the soft tissues or fractures (fig 4). Optimum duration and type of immobilisation are uncertain, and it is unclear if immobilisation prevents recurrence. A systematic review found that immobilisation for more than one week was not beneficial in preventing recurrence in patients younger than 30. About one third of patients experience a recurrent dislocation whether immobilisation is in internal or external rotation, as in a Cochrane review (seven trials, 704 patients) with duration of immobilisation of three or four weeks.

EDUCATION INTO PRACTICE

- When do you suspect an anterior shoulder dislocation?
- How would you discuss management options with a patient who has recurrent dislocation?
- When would you refer a patient with anterior shoulder dislocation to a shoulder specialist?
A 4 year old boy presented with pain in his right elbow after a fall from a bicycle on to his outstretched hand. His father had noticed him lying on his arm after the fall. The patient was guarding his right elbow in a flexed and adducted position.

On examination, this was a closed injury with no obvious clinical deformity, swelling, or skin changes to the elbow; distally, the radial pulse was present and the median (including anterior interosseous), radial, and ulnar nerves were intact. No other injuries were identified. Observations were normal. Lateral and anteroposterior plain radiographs were taken (fig 1, fig 2).

What is the diagnosis?

**Spot diagnosis** A traumatic elbow injury

**Learning point** Avoid missing supracondylar fractures by scrutinising radiographs for signs of anterior and posterior fat pads, and for failure of the anterior humeral line to pass through the centre of the capitellum (fig 4). Additional radiological views—for example, radial head or oblique—might be required if the initial views are equivocal.

Comprehensive history, thorough examination, and a thorough check of all radiographs are important for diagnosis. Early recognition and referral to the orthopaedics department for timely management can avoid potential complications, such as nerve injury, vascular injury, compartment syndrome, and malunion.

**Patient outcome** The patient was fitted with an above elbow backslab for three weeks, with no complications.

**Learning module** You can record CPD points for reading any article. We suggest half an hour to read and reflect on each.
Unruptured intracranial aneurysms
A downside of the widespread availability of magnetic resonance imaging is the incidental finding of unruptured intracranial aneurysms. Most of them are unlikely ever to cause trouble but, understandably enough, patients are often dismayed when they learn the diagnosis. A review in Practical Neurology explains that the risks of endovascular or neurosurgical treatment often far outweigh the risk of not intervening, especially when the aneurysms are small and in older people (Pract Neurol doi:10.1136/practneurol-2020-002521).

Effective altruism and career choice
If you’re a doctor or healthcare professional you may believe that you made a public spirited choice of career. But rather than feeling smug, challenge your preconceptions by reading about the effective altruism movement, which encourages people to use high quality evidence and careful reasoning to work out how best to help others (Postgrad Med J doi:10.1136/postgradmedj-2020-138936). The acts of individual clinicians, even if repeated over many years, may achieve little when compared with, for example, a donation from a successful entrepreneur that funds the distribution of insecticidal mosquito nets.

Out-of-hospital cardiac arrest
A retrospective registry study from Queensland, Australia, investigated outcomes in adults who survived an out-of-hospital cardiac arrest long enough to be admitted to hospital (Heart doi:10.1136/heartjnl-2020-317333). The outlook is improving. Over a 13 year period, chances of survival at both 30 and 365 days post-arrest increased substantially. Similar trends were observed in people living in remote areas as well as in cities. Unfortunately, the study had no information about rates of long term neurological disability.

Value of cash transfers
A straightforward way of helping poor people is to give them money. A cluster randomised trial of unconditional cash transfer in 162 villages in rural Togo reports positive effects on children’s growth (PLoS Med doi:10.1371/journal.pmed.1003388). Both study arms received support for managing childhood illnesses and acute malnutrition. Women in the intervention arm also received monthly unconditional cash transfers from pregnancy to their child’s second birthday.

ST elevation
Emergency department staff weren’t surprised by complaints of abdominal discomfort when a 26 year old prison inmate was brought to them two hours after he had deliberately swallowed an AA battery (Ann Intern Med doi:10.7326/L20-1123). However, the explanation for his electrocardiogram, which showed ST-segment elevation in the inferior leads, wasn’t so obvious—especially as troponin levels were normal. The ECG normalised after the battery was removed at endoscopy, suggesting that the explanation was an electric current created in the electrolytic contents of the stomach.

Colorectal cancer in people with diabetes
Diabetes is associated with an increase in risk of colorectal cancer and a nationwide registry study from Sweden explores how this might influence screening strategies (PLoS Med doi:10.1371/journal.pmed.1003431). It found that men and women with diabetes reached the risk levels for 50 year olds in the general population by about the age of 45. This effect, however, is dwarfed by influence of a family history of colorectal cancer. People with both diabetes and a family history reached the same level of risk as the general population 12 to 20 years earlier.