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Is Laparoscopic or Open Surgery Better to Prevent Recurrence of an Inguinal Hernia in an Adult Man?: Update

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What are the current diagnostic criteria for diabetes mellitus?

Evidence-Based Answer

The diagnostic criteria for diabetes mellitus (DM) include (1) two separate fasting plasma glucose (FPG) values >126 mg/dL, (2) two separate 2-hour oral glucose tolerance test (OGTT) glucose values ≥200 mg/dL, or (3) a random glucose ≥200 mg/dL. The use of hemoglobin A1c (HbA1c) for the diagnosis of DM is not recommended at this time. (SOR **C**, based on expert opinion.)

Numerous studies have examined the relationship between plasma glucose and mortality and cardiovascular complications, but have failed to show a definite threshold that should be used to define DM. However, both the American Diabetes Association (ADA) and the World Health Organization (WHO) have set forth criteria for the diagnosis of DM. These criteria identify people with significantly increased premature mortality and increased risk of vascular complications.

The WHO defines DM by 2 criteria: (1) a FPG >126 mg/dL or (2) a 2-hour glucose value >200 mg/dL after an OGTT.[1] Because data from both the DECODE[2] and the NHANES III[3] studies showed FPG alone fails to diagnose approximately 30% of people with DM, the WHO recommends the OGTT in its diagnostic criteria.

The ADA defines DM by the WHO criteria above, as well as by a random glucose ≥200 mg/dL in the context of hyperglycemic symptoms, such as polyuria, polydipsia, or unexplained weight loss.[4] The ADA recommends that in the absence of unequivocal hyperglycemia, the FPG and OGTT tests should be confirmed by repeat testing on a different day. The WHO also recommends an OGTT in people who have FPG values between 110 and 125 mg/dL.

More recently, HbA1c has been studied for its use in the diagnosis of DM. Overall the performance of HbA1c has been similar to that of fasting or 2-hour glucose, but the appropriate cutoff is unclear because of problems with test standardization and population variability. In an Australian systematic review of 9 studies comparing HbA1c and FPG with the OGTT for diagnosing DM,[5] a variety of HbA1c cutoff points were used, but the most common was 6.1%. At that level, sensitivity ranged from 78% to 81% and specificity from 79% to 84%. FPG sensitivity ranged from 48% to 64% and specificity ranged from 94% to 98%.

In a cohort study of 500 UK and 1,175 Australian patients,[6] the efficacy of concurrent FPG and HbA1c as a screening strategy for identifying undiagnosed DM was examined. This study used 6.0% as the HbA1c cutoff. In the UK cohort, the algorithm had a sensitivity of 97% and a specificity of 100%, with a positive predictive value (PPV) of 100% and a negative predictive value (NPV) of 97%. The Australian cohort had a sensitivity of 93% and a specificity of 100%, with a PPV 100% and an NPV of 96%.

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Is laparoscopic or open surgery better to prevent recurrence of an inguinal hernia in an adult man? UPDATE

Evidence-Based Answer

The risk of recurrence of inguinal hernia is reduced by the use of synthetic mesh, but does not depend on the specific surgical procedure. Compared with the open approach, laparoscopy requires a longer operation (15 minutes longer on average), but decreases recovery time and reduces persistent pain and numbness. (SOR **A**, based on a systematic review.) Recurrence rates with laparoscopic inguinal hernia repair are highly operator dependent. (SOR **A**, based on 2 large randomized controlled trials [RCTs].)

A Cochrane review of 41 randomized and quasirandomized control trials (n=4,161) comparing minimal access laparoscopic mesh techniques with open (mesh or nonmesh) techniques for inguinal hernia repair showed that with the use of mesh, the rates of

hernia recurrence from 6 weeks to 36 months were similar in the laparoscopic and open surgery groups. Use of mesh was associated with a significant reduction in recurrence rate (odds ratio [OR] 0.45; 95% confidence interval [CI], 0.28–0.72; *P*=.0009) compared with open surgery without mesh. Laparoscopic repair took longer than open surgical repair: the mean increase in surgical time was 14.81 minutes (95% CI, 13.98–15.64; *P*<.0001). Patients who underwent laparoscopic surgery had less persistent pain (OR 0.54; 95% CI, 0.46–0.64; *P*<.0001) and less persistent numbness (OR 0.38; 95% CI, 0.43–0.49; *P*<.0001) than patients undergoing open repair.[1,2]

One RCT from 14 VA hospitals assigned men with inguinal hernias (n=1,696) to have either laparoscopic mesh or open mesh repair and compared the recurrence rates at 2 years. The intent-to-treat analysis showed that at 2 years, recurrences were more common in the laparoscopic group (87 recurrences/862 patients [10.1%]) than in the open group (41 recurrences/834 patients [4.9%]; OR 2.2; 95% CI, 1.5–3.2) The recurrence rate with laparoscopic repair of primary hernias was 12.3% (65/528) for the 58 surgeons who performed 250 or fewer laparoscopic repairs, compared with 5.1% (13/253) for the 20 surgeons who performed more than 250 laparoscopic repairs (*P*<.001). For open repairs, there was no significant difference in the rate of recurrence between the most experienced group of surgeons and surgeons with less experience: 4.1% (26/635) and 2.5% (3/121), respectively (*P*=.12).[3]

Results from a large 2009 multicenter RCT (n=1,512) comparing recurrence rates after laparoscopic mesh or open mesh inguinal hernia repair among men aged 30 to 70 years, found that the cumulative recurrence rate was 3.5% in the laparoscopic group and 1.2% in the open group (*P*=.008) after a 5-year follow-up. Tests for heterogeneity revealed significant differences between individual surgeons. The exclusion of 1 surgeon, who was responsible for 33% (7/21) of all recurrences in the laparoscopic group, lowered the cumulative recurrence rate in the laparoscopic group to 2.4%, which was not statistically different from that of the open group (*P*=.109).[4]

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Does low-dose aspirin therapy prevent preeclampsia in pregnant women at increased risk?

Evidence-Based Answer

Yes, to a limited degree. For women at increased risk, low-dose aspirin (LDA) reduces the risk of developing preeclampsia by 17%. Women at high risk have a 25% reduction in developing preeclampsia. Additionally, treated women demonstrated a reduction in preterm delivery, perinatal death, and the incidence of small-for-gestational-age (SGA) infants. (SOR **A**, based on systematic reviews and randomized controlled trials [RCTs].)

A 2007 Cochrane review included 59 trials of aspirin use in 37,560 pregnant women. Studies defined patients as high risk (previous severe preeclampsia, diabetes mellitus, chronic hypertension, renal disease, or autoimmune disease), or moderate risk (first pregnancy, mild rise in blood pressure without proteinuria, multiple pregnancies, or family history of preeclampsia). When risk was unclear women were classified as moderate-low risk. Three trials included both primary and secondary prevention arms.[1]

Overall, LDA was associated with a 17% reduction in the risk of preeclampsia (relative risk [RR]=0.83; 95% confidence interval [CI], 0.77–0.89). Women who were at high risk at trial entry had a 25% risk reduction (RR=0.75; 95% CI, 0.66–0.85), and moderate-risk women had a 14% risk reduction (RR=0.86; 95% CI, 0.79–0.95). For primary prevention, 72 women (95% CI, 52–119) would need to be treated to prevent 1 case of preeclampsia. In the high-risk group, 19 women (95% CI, 13–34) would need to be treated to prevent 1 case of preeclampsia. The use of LDA in all subgroups also reduced the