purpose the Centers for Disease Control and Prevention (CDC) guidelines recommend a follow up of 30 days.[6] Only 7 trials (50%) included in the current meta-analysis reported an adequate duration of follow up. When trials of a low quality were removed from the current meta-analysis, the detrimental effect of MBP could not be sustained and in fact MBP was found to be protective especially in terms of intra-abdominal septic complications, although the number needed to harm was quite high. These results essentially mirror the conclusions of the 2 large trials reported in the literature.[5,7]

The results of this meta-analysis essentially relate to patients undergoing elective conventional (open) colonic surgery and it would be unwise to extrapolate these to those having rectal or laparoscopic surgery. Similarly, these conclusions cannot be applied to lesions <2 cm in size, which were excluded in almost all the trials. Such small lesions may require intraoperative localization using manual palpation or even peroperative endoscopy, which might be difficult in the presence of an unprepared bowel. Although the results of this meta-analysis suggest that there was little to choose from between oral polyethylene glycol and sodium phosphate solution, the same might not hold true for other forms of bowel preparation such as enemas or senna.

As things stand today, evidence concerning the role of MBP in colonic surgery seems to be on a roller-coaster ride and might even be swinging in favour of MBP. We seem to have come a full circle—the more things change, the more they remain the same. Surgeons are an extremely difficult group to convince, especially when it involves major surgical dogmas and it would need reliable and unequivocally conclusive data to help them give up an age-old 'addiction' such as MBP. A recent survey of members of the American Society of Colon and Rectal Surgeons regarding trends in MBP is a case in point.[8] In the Indian context, there is a paucity of data regarding the usefulness of MBP, but it appears that the majority of colorectal surgeons would err on the side of using MBP. So the question is, where do we go from here? In the absence of definitive clinical benefit and possible patient discomfort, one should not routinely prescribe MBP before elective open colonic surgery. However, it might be worth exploring the role of MBP in rectal surgery especially when a low rectal anastomosis is done or small lesions are resected. It might also be educative to evaluate the role of MBP in laparoscopic colorectal resections and should include, in addition to conventional outcome measures, an assessment of the operative difficulty or ease.

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Coronary artery bypass or percutaneous intervention for multivessel coronary artery disease

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SUMMARY

Percutaneous coronary intervention (PCI) using drug-eluting stents is being used more frequently to treat complex coronary artery disease. Traditionally, coronary artery bypass grafting (CABG) has been the treatment of choice. This trial compared PCI and CABG among patients with previously untreated triple-vessel disease or left main coronary artery disease or both, and included 1800 patients in whom the treating team (cardiac surgeon/interventional cardiologist) felt that equal anatomical revascularization could be done with either procedure. If the treating team felt that in a patient either one of the treatment modalities would be beneficial because of the anatomical or clinical situation, the patients were included in a separate parallel, nested CABG or PCI registry.

A non-inferiority comparison of the two groups was done for the primary end-point—a major adverse cardiac or cerebrovascular event (i.e. death from any cause, stroke, myocardial infarction or repeat revascularization) during the 12-month period after

randomization. Most preoperative characteristics were similar in the two groups. The rates of major adverse cardiac or cerebrovascular events (MACCE) at 12 months were significantly higher in the PCI group (17.8% *v*. 12.4% for CABG, p=0.002). This was mainly because of an increased rate of repeat revascularization (13.5% *v*. 5.9%, p<0.001). As a result, the criterion for non-inferiority was not met. At 12 months, the rates of death and myocardial infarction were similar between the two groups; stroke was significantly more likely to occur with CABG (2.2% *v*. 0.6% with PCI, p=0.003). The authors concluded that CABG is the standard of care for patients with 3-vessel or left main coronary artery disease.

COMMENT

This trial (SYNTAX) is the largest of those comparing CABG and PCI for coronary artery disease using contemporary technology. Previously, several randomized trials have compared PCI with CABG for multivessel coronary artery disease. PCI in these trials used bare metal stents. An overview of these trials showed that patients undergoing PCI had lower rates of relief from angina and higher major adverse cardiovascular events (MACE) during follow up.[1,2] Higher MACE rates were mainly due to higher re-interventions in the PCI arm due to stent re-stenosis (40.1% after PCI with stents compared with 9.8% after CABG).[1] Drug-eluting stents (DES) compared with bare metal stents have been shown in randomized controlled trials to reduce re-stenosis. Thus, the SYNTAX trial was designed to test whether revascularization using DES would make MACCE rates in PCI patients similar to those with CABG. This was a well-designed trial that tested results of CABG (with arterial grafts) versus PCI (using DES [Taxus]) in patients at high risk and with complex coronary artery disease such as left-main disease, triple-vessel disease or both. This study more closely mirrored the real world practice as compared with earlier studies. Over two-thirds of screened patients were enrolled in the trial (previous studies enrolled about one-tenth of the patients who had been screened).

The SYNTAX trial again showed that CABG was superior to PCI as it reduced the rates of MACE. Results of previous non-randomized studies comparing DES with CABG have also shown higher MACCE rates in the PCI arm.[3–5] The higher MACE rates have been mainly due to more revascularizations in the PCI arm,[3,4] though one study showed that CABG was associated with a lower mortality.[5]

However, this trial gave reason for both the cardiac surgeon and the interventional cardiologist to rejoice. While the reason for surgeons to be happy is obvious from the conclusion of the trial, the lack of difference in 'clinical hard end-points' of death, myocardial infarction (MI) and stroke at 1 year gives solace to the interventionist. This is especially so because the type of coronary anatomy addressed in this trial is considered a taboo for PCI by most contemporary guidelines.[6,7] Thus, there may be justification for PCI in these patients at the cost of a few extra re-interventions, without seriously jeopardizing their cardiac outcomes. The risk of stroke was higher in patients undergoing CABG. While this could have been due to the surgical procedure itself, the authors have not analysed the effect of other variables on this clinical outcome (the use of well established secondary prevention drugs such as aspirin [91.2% *v*. 84.3%], statin [86.7% *v*. 74.5%], angiotensin-converting enzyme inhibitors [55.1% *v*. 44.6%] and clopidogrel [77.1% *v*. 15.0%] were much lower on follow up in the CABG arm). This is a serious limitation as there is ample evidence that long term use of each of these medications by itself reduces MACE and thus could have influenced the primary outcome of the trial against CABG. Another limitation of this trial is the short follow up of 1 year; this may be inadequate to truly differentiate between the hard end-points of MI, stroke and death—a 5-year follow up may be more useful in this regard.

The important lesson to be learned from this trial is the usefulness of having a 'heart team' consisting of a cardiac surgeon and an interventional cardiologist to jointly discuss and decide effective and safe means of revascularization in the manner practised in this trial. In this context, it is best to avoid revascularization immediately after diagnostic angiography in patients with such complex coronary anatomy to give time for the 'heart team' to discuss all the data and also for the patient to understand the nuances of treatment and make an informed choice. The other important outcome of this trial may be the SYNTAX score—a score based on the anatomy of coronary artery disease. Patients with a high SYNTAX score did better with CABG while those with a low SYNTAX score fared equally well with both procedures.

Thus, the results of this study highlight the point that while trials are educative, clinical decision-making ultimately needs to be individualized for each patient based on several clinical parameters. In a trade-off between opening the chest and a repeat procedure, some may choose the latter, though in developing countries such as India where a vast majority of medical expenditure is out-of-pocket and patients prefer procedures that are enduring and one-time, CABG may be preferable.

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