SELECTED ABSTRACTS

Ruwan E. Wijesuriya, Editor

Abridged abstracts from the surgical literature

Antibiotics as first-line therapy for acute appendicitis: Evidence for a change in clinical practice

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Source: Department of Surgery, Institute of Clinical Sciences, Sahlgrenska Academy, Sahlgrenska University Hospital, 416 85, Goteborg, Sweden.

Abstract

Background: Randomized studies have indicated that acute appendicitis may be treated by antibiotics without the need of surgery. However, concerns have been raised about selection bias of patients in such studies. Therefore, the present study was aimed to validate previous findings in randomized studies by a full-scale population-based application.

Methods: All patients with acute appendicitis at Sahlgrenska University Hospital (May 2009 and February 2010) were offered intravenous piperacillin plus tazobactam according to our previous experience, followed by 9 days out-hospital oral ciprofloxacin plus metronidazole. Endpoints were treatment efficacy and complications. Efficient antibiotic treatment was defined as recovery without the need of surgery beyond 1 year of follow-up.

Results: A total of 558 consecutive patients were hospitalized and treated due to acute appendicitis. Seventy-nine percent (n = 442) received antibiotics as first-line therapy and 20 % (n = 111) had primary surgery as the second-line therapy. Seventy-seven percent of patients on primary antibiotics recovered while 23 % (n = 100) had subsequent appendectomy due to failed initial treatment on antibiotics. Thirty-eight patients (11 %) of the 342 had experienced recurrent appendicitis at 1-year follow-up. Primary antibiotic treatment had fewer complications compared to primary surgery.

Conclusions: This population-based study confirms previous results of randomized studies. Antibiotic treatment can be offered as the first-line therapy to a majority of unselected patients with acute appendicitis without medical drawbacks other than the unknown risk for long-term relapse, which must be weighed against the unpredicted but well-known risk for serious major complications following surgical intervention.

Abstractor's Comments

Clinical diagnosis of acute appendicitis is still a challenging task for the clinician. The accuracy is known to be 70-80% in literature. However with objective assessment criteria such as Alvarado score, haematological markers such as C reactive protein and selective imaging have improved the accuracy of the diagnosis. Careful observation of this data indicates that all patients that had apparently successful treatment with antibiotics is only 43%. This includes approximately 20% of patient that had a different cause for abdominal pain that mimicked acute appendicitis. Therefore only a minority of patients with acute appendicitis seems to have benefited with antibiotics as a primary mode of therapy. Current data indicate that antibiotics as primary treatment for appendicitis should used with caution. ***Ruwan Wijesuriya MBBS, MS, MRCS***

Availability of transplantable organs from brain stem dead donors in intensive care units

Gore SM, Taylor RM, Wallwork J.

BMJ. 1991 Jan 19;302(6769):149-53.

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Objective: By audit from January to June 1989 to quantify, separately for hearts, kidneys, liver, lungs and corneas, the possible increases in transplantable organs from brain stem dead potential donors in intensive care units and to compare them with the increases achieved in October-November 1989, during intense, national publicity about transplantation.

Design: Prospective audit of all deaths in intensive care units in England from 1 January to 30 June 1989 and subsequent case study of the impact of publicity on offers and donations during October-November 1989.

Patients: 5803 patients dying in intensive care units, of whom 497 were confirmed as brain stem dead and had no general medical contraindication to organ donation.

Main outcome measures: Organ specific suitability for transplantation (as reported by intensive care units); consent for donation of specific suitable organs; and procurement of specific organs reported as suitable for transplantation and offered.

Results: In the 497 (8.6%) brain stem dead potential donors were estimated the organ specific suitability for heart as 63%, kidneys 95%, liver 70%, lungs 29%, and corneas 91%. Refusal of relatives (30%) accounted for major losses of suitable organs of all types. For kidneys the loss was equivalent to 44% of brain stem dead actual kidney donors. No discussion of organ donation was the second most important reason for missed kidney donors, the loss being equivalent to 10% of brain stem dead actual donors. Non-procurement or difficulties with allocating organs was the second most notable cause of missed suitable liver and lung donors; 29% (55) of the offered total of 189 liver donors and 27% (21) of 78 offered suitable lung donors in six months. Non-procurement of suitable, offered organs was rare for kidneys and modest, of the order of 13% and 10% respectively, for heart and corneas. Corneal donation from brain stem dead potential donors might be improved nearly as much (that is, a 78% increase in brain stem dead actual corneal donors) by specific measures to promote corneal donation when other organs are offered as by reducing the overall refusal rate. Restricted offers, non-procurement, and no discussion of donation accounted for nearly equal numbers of lost donations of hearts (each equivalent to 15% of donated hearts). During October-November 1989 when there was intense, positive publicity about transplantation the rates of refusal and non-discussion fell compared with during January-June (22%, 36/163 v 30%, 138/460; 7%, 33/497 v 2%, 4/167 respectively). Offers of suitable donors increased significantly (p less than 0.02) compared with the first six months of 1989, most notably for heart donors (80 v 60.1 expected) and kidney donors (122 v 102.1 expected) but only for kidneys was there a noticeable 17% increase in actual donors (118 actual audited donors v 100.8 expected donors; p = 0.09).

Conclusions: Four strategies to increase the supply of transplantable organs from brain stem dead potential donors in intensive care units were identified: (a) reducing refusal of relatives (b) avoiding non-procurement of actually suitable organs (by logistical initiatives) and deterioration of initially suitable organs (by donor care initiatives); (c) converting restricted offers to unrestricted offers; and (d) ensuring discussion with families. Early referral to the transplant team or coordinator gives time for discussion about donor care and agreement on medical suitability for donation of specific organs. Solving some of the logistical problems of non-procurement may be a prerequisite for increased offers to be translated into increased donations. The impact of publicity therefore needs to be measured on offers of suitable donors as well as by actual donations.

Abstractors Comments

This abstract reflects the situation in the United Kingdom 20 years ago, during early days of liver transplantation; the situation is somewhat similar to present day in Sri Lanka. The referral rates and the consent rates seem to be much better than what we have experienced in Sri Lanka during the last year. This abstract clearly highlights the value of intense awareness program that changed the attitude of the general public but also among the health care professionals. Lessons were learned by policy makers and the transplant programs moved forward in the United Kingdom. Sri Lanka, having the highest corneal donation rate in the world should have a better organ donation rate compared to other countries. It is all about changing attitudes and moving towards a national policy. ***Rohan Siriwardana MBBS, MS MRCS***

Colonoscopic polypectomy and long-term prevention of colorectal-cancer deaths

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Background: In the National Polyp Study (NPS), colorectal cancer was prevented by colonoscopic removal of adenomatous polyps. We evaluated the long-term effect of colonoscopic polypectomy in a study on mortality from colorectal cancer.

Methods: We included in this analysis all patients prospectively referred for initial colonoscopy (between 1980 and 1990) at NPS clinical centres who had polyps (adenomas and nonadenomas). The National Death Index was used to identify deaths and to determine the cause of death; follow-up time was as long as 23 years. Mortality from colorectal cancer among patients with adenomas removed was compared with the expected incidence-based mortality from colorectal cancer in the general population, as estimated from the Surveillance Epidemiology and End Results (SEER) Program, and with the observed mortality from colorectal cancer among patients with nonadenomatous polyps (internal control group).

Results: Among 2602 patients who had adenomas removed during participation in the study, after a median of 15.8 years, 1246 patients had died from any cause and 12 had died from colorectal cancer. Given an estimated 25.4 expected deaths from colorectal cancer in the general population, the standardized incidence-based mortality ratio was 0.47 (95% confidence interval [CI], 0.26 to 0.80) with colonoscopic polypectomy, suggesting a 53% reduction in mortality. Mortality from colorectal cancer was similar among patients with adenomas and those with nonadenomatous polyps during the first 10 years after polypectomy (relative risk, 1.2; 95% CI, 0.1 to 10.6).

Conclusions: These findings support the hypothesis that colonoscopic removal of adenomatous polyps prevents death from colorectal cancer. (Funded by the National Cancer Institute and others.)

Abstractor's Comments

It has been shown that detection of early stage colorectal carcinomas through colonoscopic screening reduces mortality from colorectal cancer. Once detected, most colonoscopist will snare polyps as standard of care. National Polyp Study (NPS) has shown that there is reduced incidence of colorectal cancer by colonoscopic polypectomy. Whether this translates to a reduction in mortality has been a question. Assessments of the advantages of screening colonoscopies are confounded by selection bias, length bias and lead-time bias. This study has shown a significant reduction in mortality due to colorectal cancer by colonoscopic polypectomy. This is an argument for screening colonoscopy and polypectomy, with its added risks and costs involved.

Rasika Kotakadeniya MBBS, MS, MRCS

Shouldice technique versus other open techniques for inguinal hernia repair

Amato B, Moja L, Panico S, Persico G, Rispoli C, Rocco N, Moschetti I.

Cochrane Database Syst Rev. 2009 Oct 7;(4):CD001543.

Source: Dipartimento di Chirurgia Generale (Edif. 6), Universita degli Studi di Napoli, Via S. Pansini, 5, Napoli, Italy, 80131.

Abstract

Background: Inguinal hernia repair is the most frequent operation in general surgery. There are several techniques: the Shouldice technique is sometimes considered the best method but different techniques are used as the "gold standard" for open hernia repair. Outcome measures, such as recurrence rates, complications and length of post operative stay, vary considerably among the various techniques.

Objectives: To evaluate the efficacy and safety of the Shouldice technique compared to other non-laparoscopic techniques for hernia repair.

Search strategy: We searched MEDLINE, EMBASE, and The Cochrane Central Register of Controlled Trials (CENTRAL), April 2008, for relevant randomised controlled trials.

Selection criteria: Any randomised or quasi-randomised controlled trials (RCT) on the treatment of primary inguinal hernia in adults were considered for inclusion.

Data collection and analysis: All abstracts identified by the search strategies were assessed by two independent researchers to exclude studies that did not meet the inclusion criteria. The full publications of all possibly relevant abstracts were obtained and formally assessed. Missing or updated information was sought by contacting the authors.

Main results: Sixteen trials contributed to this review. A total of 2566 hernias were analysed in the Shouldice group with 1121 mesh and 1608 non-mesh techniques. The recurrence rate with Shouldice techniques was higher than mesh techniques (OR 3.80, 95% CI 1.99 to 7.26) but lower than non-mesh techniques (OR 0.62, 95% CI 0.45 to 0.85). There were no significant differences in chronic pain,

complications and post-operative stay. Female were nearly 3% of included patients.

Authors' conclusions: Shouldice herniorrhaphy is the best non-mesh technique in terms of recurrence, though it is more time consuming and needs a slightly longer post-operative hospital stay. The use of mesh is associated with a lower rate of recurrence. The quality of included studies, assessed with jaded scale, were low. Patients have similar characteristic in the treatment and control group but seems more healthy than in general population, this features may affect the dimension of effect in particularly recurrence rate could be higher in general population. Lost to follow-up were similar in the treatment and control group but the reasons were often not reported. The length of follow-up vary broadly among the studies from 1 year to 13.7 year.

Abstractor's Comments

No doubt that the invention of synthetic mesh has revolutionized hernia surgery. Shouldice techniqueremains the only contender for the title of "gold standard" in open hernia repair , with mesh techniques.

This systematic review compares Shouldice technique with other open herniorrhaphy techniques. There has been significant limitations as outlined by author himself, who questions the method of randomization and also the length of follow up in the sixteen trials contributed.

While accepting that mesh techniques are probably superior in terms of recurrence rates, one can argue that the Shouldice technique can be less costly, and chances of having complications in relation to infection would be less.

Outcomes similar to mesh repair have been achieved by specialize hernia centres that perform shouldice technique. However this cannot be generalized to all surgical centres. Therefore synthetic mesh repair should be the standard of care for repair of inguinal hernia. ***Saman Maheepala MBBS, MS***