Correspondence


Intestinal permeability and statistics

SIR,—We read with interest the paper by Bjarnason et al (Gut 1986; 27: 1292-7) about the effect of non-steroidal anti-inflammatory drugs (NSAIDs) on the permeability of the human small intestine by using 51Cr-EDTA method. Their conclusions may be summarised as follows: (1) there is a stepwise increase in excretion values of 51Cr-EDTA after ingestion of NSAID according to their potential for inhibiting cicloxygenase. (2) The effect of NSAID in intestinal permeability is systemically mediated. (3) An increased urinary excretion of 51Cr-EDTA is not related to increased glomerular filtration rate due to indomethacin. (4) Prostaglandin E2 decreases the absorption of 51Cr-EDTA but does not prevent the indomethacin-induced increased intestinal permeability. The paired Student’s t test was used to assess all variables in this study.

In our opinion the statistical analysis in this paper merits some criticism. The Student’s t test for paired data is an appropriate test when used as it was in the above stated third conclusion. There, the authors compare two means obtained in the same individuals, and the t test for paired data is a good choice. When more than two means are to be compared, as in conclusions 1, 2, and 4, analysis of variance is the most useful technique, because it determines whether there are differences between the means of several groups. When significant differences do exist, a multiple comparison test — that is, Scheffé, Tukey, Newman-Keuls and Duncan tests — should be used to assess which are the populations which differ from the others. If multiple t test are used for this latter purpose, the results obtained are difficult to interpret. Each time the test is applied the level of significance increases and therefore there is an increase in the probability of labelling a result as ‘statistically significant’, even when all populations have identical means. Unfortunately this lack of accuracy in selecting the statistical methodology may mislead the reader. This is especially regrettable, as the measurement of intestinal permeability, as shown by Bjarnason et al, promises to be important in the understanding of the physiopathology of IBD, some systemic illnesses and of the noxious effects of certain agents such as alcohol and NSAID’s on the integrity of the gut. This technique is becoming important in clinical research and the results obtained with it have to be carefully handled in order to take best advantage of its possibilities.

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References


Reply

SIR,—We accept the aforementioned comments. Analysis of variance, however, largely confirms the statistical statements obtained by the t test. The two exceptions were that the increased permeability after ibuprofen and the decreased permeability after Prostin E2 were of borderline significance using analysis of variance. In the face of a significant t-test these results should, therefore, be viewed as probable rather than proven.

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Reply*

Endoscopic sclerotherapy using absolute alcohol

SIR,—Thank you for giving us the opportunity to reply to the letter of Bhargava et al. Gut 1986; 27: 1518. In their experience, sclerotherapy with absolute alcohol resulted in a high complication rate. Whilst respecting their technical skill, a number of minor details need attention to better assess their results. The use of Olympus NM 1 K or 3 K injector is not ideal for intravarical sclerotherapy. The frequency of inadvertent paravarical or intramuscular injection of the sclerosant could be quite high. We therefore, recommend the use of a transparent Teflon injector, through which blood can be seen to flow up into the tube on puncturing the varix ensuring an intravarical injection. We feel also that the optimal amount of the sclerosant to be used per puncture must be determined. In our experience, ‘blanching’ is a useful indicator when to stop while injecting alcohol or ethanolamine olate. If larger amounts of sclerosant are injected, complications would
increase. This is particularly true with strong sclerosants like alcohol. These two technical points have relevance to the observations of Bhargava et al who found only deep oesophageal wall ulcers (76-4%) and no oesophageal mucosal (on varices) ulcers. It is generally accepted that 90–95% of post sclerotherapy ulcers are mucosal, they heal spontaneously, and are benign.6

No details of the patients, such as age, severity of liver disease, grade of varices and time of endoscopy (elective or emergency) have been provided by Bhargava et al. The results seem to be somewhat predetermined, as the end point of sclerotherapy was either achievement of variceal obliteration or development of complications. No other study on sclerotherapy has used the later criteria as an end point.

In a recent review of endoscopic therapy of upper gastrointestinal bleeding alcohol has been mentioned as one of the three main sclerosants used in USA for endoscopic sclerotherapy; the other two being sodium morrhuate and sodium tetradecyl sulphate.6 As well as our centre, others in India and Japan have been using alcohol for sclerotherapy. Dilawari et al carried out sclerotherapy with either absolute alcohol, or sodium tetradecyl sulphate (STD) in 52 patients with variceal bleeding.7 Obliteration of varices was achieved with alcohol in 58% and with STD in 69%, with a mean of 4.8±1.4 and 5.6±2.6 sclerotherapy sessions respectively. Overall complications with alcohol were observed in 14/93 (15%) sessions while with STD in 21/121 (17.4%) sessions. They concluded that absolute alcohol was as safe and effective as STD, with a higher cost benefit ratio. Kimura et al in Chiba, Japan, have successfully used absolute alcohol for both variceal sclerotherapy and for transeptatic embolisation of varices in more than 300 patients without significant complications (personal communication). Based on our data and the experience of other groups, we recommend regular, but disciplined, use of absolute alcohol as a sclerosant for emergency and elective sclerotherapy.

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References

* This reply was delayed owing to postal difficulties.

Books


This is an extremely comprehensive book compiled by many different authors, covering all aspects of liver and biliary cancer. It is authoritative and up-to-date and timely, because new methods of treatment such as transplantation are now providing for a few selected patients excellent treatment. It is very well illustrated and beautifully produced with appropriate references. I feel it should in the libraries of general surgical departments and would be essential reading for surgeons, especially those interested in liver and biliary cancer.

To cover all aspects of hepatic and biliary cancer the editors have contributions from 43 authors and inevitably the style of writing varies. Part I consists of a major section on primary liver cancer, including epidemiology, diagnostic techniques, the relevant anatomy, surgical procedures, chemotheraputery. Part II is concerned with the extrahepatic bile ducts. Again, all aspects are covered and part III deals with cancer of the gall bladder. The last part has interesting chapters on special considerations in liver and biliary cancer, what to do with a patient who presents with liver metastases, technical considerations in hepatic resection and a very important chapter on transplantation for primary liver cancer. The longest survivors after surgical treatment of liver cancer have been after transplantation. Clearly, this operation removes the whole of the hepatic tumour and as there are many examples of multifocal lesions, potentially precancerous liver tissue is also removed. The converse of these two points is apparent in
Reply Endoscopic sclerotherapy using absolute alcohol

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Updated information and services can be found at:
http://gut.bmj.com/content/28/6/777.3.citation

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