Paracentesis in the management of ascites

Sir,

I read with great interest the article 'Paracentesis in the management of ascites' by Mittal and Dangoor (vol 68(9), 2007, p. M162).

There are few points in the article that deserve further discussion. In *Table 3* the authors state that white cell count of >350/μl is suggestive of infection. I suspect that they refer to the polymorphonuclear (PMN) absolute count; in this case the number is 250 PMN/μl. On the other hand, if they intended to use the total white cell count, the number that confirms bacterial infection is 500 cells/μl (Koulaouzidis et al, 2007). In any case, the discrepancy is more obvious in page M165, where under the heading 'Infection: spontaneous bacterial peritonitis' they write 'An ascitic fluid PMN cell count … of spontaneous bacterial peritonitis'.

The use of 1.1 g/dl as serum-ascitic albumin gradient (SAAG) threshold may lead to confusion, especially among the foundation year trainees; SAAG is calculated by subtracting the ascitic fluid albumin concentration from that of the serum and as most UK hospitals use g/litre the corresponding SAAG level should be 11 g/litre.

Furthermore, while a red cell count >10 000/μl is considered as threshold for pink appearance of the ascitic fluid, a count ≥ 20 000/μl gives a distinctly red colour. Runyon (2006) suggests that only 5% of tuberculous samples are haemorrhagic, and while samples from patients with hepatocellular carcinoma are regularly bloody, only 10% of patients with peritoneal carcinomatosis have haemorrhagic ascites.

In the same table, it is mentioned that pH <7 suggests infection. Initial enthusiasm in the late 1980s (Stassen et al, 1986) for threshold values much higher (pH<7.34) have been crushed under the light of newer evidence (Runyon and Antillon, 1991). Hence, tests like pH (alone or as gradient with its blood counterpart) and lactate are seldom helpful in diagnostic or therapeutic decisions.

Mittal and Dangoor suggest administration of fresh frozen plasma (if international normalized ratio >2.0) or platelets (if count <50 000/μl) before paracentesis. Guidelines from the British Society of Gastroenterology state that there are no data to support the use of fresh frozen plasma although most clinicians would prefer to use pooled platelets in cases of severe thrombocytopenia (platelets <40 000/μl) (Moore and Aithal, 2006). It is estimated that approximately 100–200 units of fresh frozen plasma or platelets would have to be given to prevent the transfusion of 2 units of red blood cells for a post-paracentesis haematoma (Runyon, 2006).

Finally, I have to agree in total with the authors' statement that removal of 5–6 litres of ascitic fluid may be as beneficial in symptom relief as a 'drain to dryness' tap. The latter, as well as unreasonably prolonging the drainage time, leads to removal of ascitic fluid proteins essential for defence against translocating bacteria.

Anastasios Koulaouzidis
Staff Physician in Gastroenterology
Llandudno General Hospital
Llandudno LL30 1LB

Moore KP, Aithal GP (2006) Guidelines on the management of ascites in cirrhosis. *Gut* **55**: vi1–vi12

Koulaouzidis A, Bhat S, Karagiannidis A, Tan WC, Linaker BD (2007) Sponataneous bacterial peritonitis. *Postgrad Med J* **83**: 379–83

Runyon BA, Antillon MR (1991) Ascitic fluid pH and lactate: Insensitive and non-specific tests in detecting ascitic fluid infection. *Hepatology* **13**: 929

Runyon BA (2006) Ascites and spontaneous bacterial peritonitis. In: Feldman M, Friedman LS, Sleisenger MH, eds. *Sleisenger and Fordtran's Gastrointestinal and Liver disease.* 8th edn. Saunders, Philadelphia: 1935–64

Stassen WN, McCullough AJ, Bacon BR et al (1986) Immediate diagnostic criteria for bacterial infection of ascitic fluid. Evaluation of ascitic fluid polymorphonuclear leukocyte count, pH, and lactate concentration, alone and in combination. *Gastroenterology* **90**: 1247–54

Correction

There were some errors in *Figure 2* of the article 'Recognition and early management of the critically ill ward patient' (vol 68(10), 2007, p. M180). We would like to apologise for any confusion or embarrassment caused. The correct figure is reprinted below.

Figure 2. Recognition and early management of the critically ill ward patient.