

There have been many studies that have looked at cohorts to determine factors related to prognosis and indicators for airway intervention,⁵⁻⁷ but there is no uniformity related to the treatment of this potentially fatal condition.⁴ It is universally accepted that the medical treatment of supraglottitis should include the empirical use of antibiotics. The use of corticosteroids, however, is controversial. Corticosteroid therapy is thought to act by an anti-inflammatory effect, coupled with stabilization of endothelial permeability, thus decreasing extracellular and intracellular oedema.⁸ Many studies, however, have shown no reduction in the need for intubation, the duration of intubation, the duration of intensive care stay, or the duration of hospitalization after corticosteroids.^{1,3,9} One study has indicated that the use of corticosteroids may actually be associated with a poorer outcome.⁷ The rationale for using corticosteroids is based on presumption, not on the basis of any well-designed, double-blind studies.¹⁰

In cases of supraglottitis where one is evaluating the many clinical signs and physiological variables postulated to be associated with poorer outcomes, clear definition of these factors is crucial. Grading scales related to the need for intubation have been produced using such factors.⁵ Important factors include temperature, C-reactive protein and white cell count.^{1,11} It has been reported that the rate of inflammatory progression is the most important prognostic factor in adult supraglottitis.^{11,12}

In the intensive care setting, corticosteroids have been accepted as a part of the treatment for severe sepsis and/or septic shock, as a significant number of these patients have adrenal suppression from the inflammatory response.¹³ What is difficult to assess is the suppression of inflammatory markers such as C-reactive protein, procalcitonin, the febrile response, and the white cell count by corticosteroids in these patients. There are reports in the literature that show that the use of corticosteroids dampens the production of inflammatory markers.¹⁴

There are many examples in clinical medicine of how therapeutic measures are disregarded, as their ultimate effects may mask important clinical signs that provide information related to the patient's overall clinical state. It is accepted by most intensivists that the routine use of antipyretic agents, such as acetaminophen, may not be in the best interest of the patient, except when the temperature is uncontrollable. The use of antipyretics has been shown to suppress the expression of useful proteins such as heat shock protein—which has a significant inhibitor role on pro-inflammatory cytokines—and also increase the minimum inhibitory concentration (MIC) of antibiotics. Artificial suppression of a natural response to stress or infection may have deleterious effects on the progress of the illness and may also mask useful clinical variables such as the febrile response.¹⁵ This is similar to monitoring the prothrombin time (PT) as a measure of the severity and prognosis of acute hepatic failure.^{16,17} Most hepatologists would not correct the PT unless the clinical situation warranted reversal.

Otolaryngologists and intensive care physicians should adopt a similar philosophy when managing patients with supraglottitis. Corticosteroids are not proven to be beneficial in such patients, and their use may mask clinical signs and physiological variables. These factors may be crucial in deciding how to manage such a patient's airway. No randomized controlled trials exist with respect to the role of corticosteroids in the management of supraglottitis; until there is, caution over their use should be exercised.

J. S. Phillips
A. J. Innes
M. S. Naik
Norwich, UK

Corticosteroids for supraglottitis

Editor—Supraglottitis consists of inflammation of the epiglottis and supraglottic structures including the pharynx, uvula, base of tongue, aryepiglottic folds, or the false vocal cords.¹ Adult supraglottitis has an annual incidence of 1–4 cases per 100 000 population.^{2,3} Supraglottitis can become life-threatening and has a mortality rate of up to 7%.⁴

- 1 Wick R, Ballmer PE, Haller A. Acute epiglottitis in adults. *Swiss Med Wkly* 2002; **132**: 541–7
- 2 Carey MJ. Epiglottitis in Adults. *Am J Emergency Med* 1996; **14**: 421–4
- 3 Dort JC, Frohlich AM, Tate, RB. Acute epiglottitis in adults: diagnosis and treatment in 43 patients. *J Otolaryngol* 1994; **23**: 281–5
- 4 Chaisson RE, Ross J, Gerberding JL, Sande MA. Clinical aspects of adult epiglottitis. *West J Med* 1986; **144**: 700–3
- 5 Friedman M, Toriumi DM, Grybauskas V, Applebaum EL. A plea for uniformity in the staging of management of adult epiglottitis. *Ear Nose Throat J* 1988; **67**: 873–80
- 6 Crosby E, Reid D. Acute epiglottitis in the adult: is intubation mandatory? *Can J Anaesth* 1991; **38**: 914–18
- 7 Rivron RP, Murray JAM. Adult epiglottitis: is there a consensus on diagnosis and treatment? *Clin Otolaryngol* 1991; **16**: 338–44
- 8 Goodman LS, Gilman A. *The Pharmacological Basis of Therapeutics*, 4th Edn. New York: Macmillan Publishing Inc., 1970; 1623–4
- 9 Mayo-Smith MF, Spinale JW, Donskey CJ, Yukawa M, Li RH, Schiffmann FJ. Acute epiglottitis: an 18-year old experience in Rhode Island. *N Engl J Med* 1986; **314**: 133–9
- 10 Rowe LD. Advances and controversies in the management of supraglottitis and laryngotracheobronchitis. *Am J Otolaryngology* 1980; **1**: 235–44
- 11 Barrow HN, Vastola P, Wang RC. Adult supraglottitis. *Otolaryngol Head Neck Surg* 1993; **109**: 474–7
- 12 Deeb ZE, Yenson AC, DeFriea HO. Acute epiglottitis in the adult. *Laryngoscope* 1985; **95**: 289–91
- 13 Cooper MS, Stewart PM. Corticosteroid insufficiency in acutely ill patients. *New Engl J Med* 2003; **348**: 727–34
- 14 Lindberg L, Forcell C, Jogi P, Olsson AK. Effects of dexamethasone on clinical course, C-reactive protein, S100B protein and Von Willebrand factor antigen after paediatric cardiac surgery. *Br J Anaesth* 2003; **90**: 728–32
- 15 Ryan M, Levy MM. Clinical review: fever in intensive care unit patients. *Critical Care* 2003; **7**: 221–5
- 16 Harrison PM, O'Grady JG, Keays RT, Alexander GJ, Williams R. Serial prothrombin time as prognostic indicator in paracetamol induced hepatic failure. *Br Med J* 1990; **301**: 964–6
- 17 O'Grady JG, Alexander GJ, Hayllar KM, William R. Comments: early indicators of fulminant hepatic failure. *Gastroenterology* 1991; **100**: 1480–1

DOI: 10.1093/bja/ae527