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LETTER

# Letter to the editor



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We particularly appreciated the recent successful attempt at review of management of tumor lysis syndrome, entitled "Emerging role of rasburicase in the management of increased plasma uric acid levels in patients with hematologic malignancies"[1] which reported some practical management considerations and financial implications of a complex subject. The praiseworthy aim was to give clear and easily applicable indications for clinical practice from recently published off-label treatment studies, using lower and fewer doses of rasburicase than recommended.

The authors report that "Uricozyme is a nonrecombinant preparation of urate oxidase enzyme isolated from the fungus *Aspergillus flavus*" and, further on, that "development of rasburicase may have reduced the incidence and severity of TLS and its associated complications … however, no data on outcomes (eg, acute kidney injury, renal failure, hemodialysis, death) have been published since this agent was developed." In an Italian consensus conference, recently published on the same subject, it was noted also that "there are no randomized studies comparing rasburicase with allopurinol in adult patients with TLS."[2]

Rasburicase (Fasturtec®, Elitek®) has been compared only with allopurinol and in the pediatric setting; however, its superiority or at least its equivalence versus Uricozyme®, the extractive form of the same enzyme and also produced by sanofi-aventis, has not been tested.

In our opinion, there have been some pharmacoeconomic issues expressed that deserve to be considered, ie, "this is derived from a precise commercial choice of sanofi-aventis, that intended to project Fasturtec/Elitek®, the recombinant urate-oxidase enzyme, on the USA market, where Uricozyme is not present."[3]

In fact, Uricozyme was already present in the Italian and French pharmacopoeia, for the treatment of primary and secondary hyperuricemic conditions, as urate oxidase enzyme, extracted from *Aspergillus flavus*, which converts uric acid into allantoin. Uricozyme was withdrawn from the market by the manufacturer and replaced by the new product, disappearing also from the Italian management guidelines for tumor lysis syndrome,[2,4] as a sort of *damnatio memoriae*.

In a calculation of the Italian prices, performed during 2002 for the region of Emilia Romagna, the cost of treatment of acute hyperuricemia, at risk of tumor lysis syndrome, with allopurinol, Uricozyme, and Fasturtec/Elitek showed an extremely

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**Table 1** Daily cost of therapy for prevention of acute renal insufficiency in an adult patient with hematological malignancy and weighing 70 kg in 2002

| | Daily dose | Daily cost (€) |
|---|---|---|
| Allopurinol | 2–10 mg/kg | 0.16–0.49 |
| Uricozyme® | 1–2 fl | 35.8–71.6 |
| Fasturtec® | 0.20 mg/kg | 1320 |

Adapted from Montanaro.[3]

wide discrepancy, with the daily cost varying, respectively, from 0.16 to 1320 (Table 1).[3]

Although the two products, Fasturtec/Elitek and Uricozyme, have been compared in the French laboratories of the manufacturer, underlining the pharmacological and molecular structure differences,[5] it would be necessary to perform a prospective clinical study with the two drugs to obtain a clear demonstration of greater clinical effectiveness or less frequent side effects with Fasturtec/Elitek in comparison with Uricozyme, as has been observed in other guidelines regarding tumor lysis syndrome.[6]

The authors state that "at least some of the off-label treatment approaches appeared to be motivated in part by the desire to minimize the substantial costs." Considering the financial aspects of the current economic crisis, it would be wise in a pharmacoeconomic evaluation to take into account this further French-Italian therapeutic possibility, also bearing in mind the conspicuous price difference between the two urate-oxidase formulations and the absence of any randomized studies comparing rasburicase with Uricozyme.

## References


1. Kennedy LAD, Koontz S, Rao K. Emerging role of rasburicase in the management of increased plasma uric acid levels in patients with hematologic malignancies. *J Blood Med.* 2011;2:1–6.
2. Pession A, Masetti R, Gaidano G, et al. Risk evaluation, prophylaxis, and treatment of tumor lysis syndrome: consensus of an Italian expert panel. *Adv Ther.* 2011;28:684–697.
3. Montanaro N. Trattamento di alcune forme di iperuricemia (acuta e nefropatia uratica) in assenza dal mercato di urato ossidasi estrattiva (Uricozyme) e considerando la ristrettezza dell'indicazione terapeutica dell'urato ossidasi ricombinante (Fasturtec). Regione Emilia Romagna: Decreto Giunta Regionale. (Treatment of some forms of hyperuricemia (uric acid nephropathy and acute hyperuricemia) in the absence from the market of extracted urate oxidase (Uricozyme) and considering the narrowness of the therapeutic indication of recombinant urate oxidase (Fasturtec). Emilia Romagna Region: Regional Government Decree). 1209/2002 (Italian). Available at http://www.saluter.it/documentazione/ptr/elaborati/3-iperuricemia/at_download/file/003_iperuricemia%5B1%5D.pdf
4. Tosi P, Barosi G, Lazzaro C, et al. Consensus conference on the management of tumor lysis syndrome. *Haematologica*. 2008;93:1877–1885.
5. Bayol A, Capdevielle J, Malazzi P, et al. Modification of a reactive cysteine explains differences between rasburicase and Uricozyme, a natural Aspergillus flavus uricase. *Biotechnol Appl Biochem*. 2002;36(Pt 1):21–31.
6. Feusner JH, Ritchey AK, Cohn SL, Billett AL. Management of tumor lysis syndrome: need for evidence-based guidelines. *J Clin Oncol*. 2008;26:5657–5658.