Febuxostat; a non-purine xanthine oxidase inhibitor useful for the treatment of gout and hyperuricemia

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Numbers of the patients with gout and hyperuricemia are increasing in various countries. Since the patients are usually treated for extended periods of time, high efficacy and safety are required for the drugs used for the treatment. Two types of drugs are now available; i.e. xanthine oxidase inhibitor and uricosuric drugs. The latter drugs are not recommended for the patients with overproduction-type gout or hyperuricemia because they may increase the incidence of renal damage and urolithiasis. Since many doctors do not examine the types of gout or hyperuricemia (overproduction type or underexcretion type), xanthine oxidase inhibitor rather than uricosuric drugs are often selected as the drug for the treatment. However, the problem was that allopurinol had been the only drug as a xanthine-oxidase inhibitor without any alternatives. The lack of an alternative had been a major problem since it is well known that the probability of severe adverse reactions by allopurinol increases in

the patients with impaired renal function and with a special HLA genotype (HLA-B*5801). In 2009, a new xanthine oxidase inhibitor febuxostat was introduced in both US and Europe. It was recently approved in Japan also. This compound does not have a purine-specific structure but inhibits xanthine oxidase more efficiently than allopurinol or the metabolite oxypurinol. Febuxostat is catabolized by liver enzymes and excreted through intestine while allopurinol and the metabolite are mainly excreted into urine. The introduction of an alternative to allopurinol with stronger inhibitory effect on xanthine oxidase is likely to help patients with gout and hyperuricemia be maintained with higher efficacy and safety. In the presentation, I will review the data so far obtained from clinical studies of febuxostat, and mention the appropriate conditions where this drug is recommended for the treatment of gout and hyperuricemia.