INTISARI

Komponen utama Monosodium Glutamat adalah glutamat yang bersifat eksitotoksin. Banyak penelitian menunjukkan bahwa pemberian MSG pada hewan coba menimbulkan disfungsi reproduksi dan endokrin yang multipel. Penelitian ini dilakukan untuk mengetahui pengaruh pemberian MSG terhadap kadar testosteron darah dan gambaran morfologi sel Leydig, diameter inti serta jumlah sel Leydig pada tikus putih jantan dewasa.

Duapuluh empat ekor tikus putih jantan, umur 10-12 minggu, sehat, berat 150-190 gram, dibagi secara random menjadi 4 kelompok, masing-masing 6 ekor tikus. Sebelum perlakuan tikus diadaptasikan selama 10 hari. Kelompok I, kontrol diberi akuades 3 ml/hari, kelompok II, III dan IV masing-masing diberi MSG 2400,4800 dan 9600 mg/kgBB/hari. Semua tikus diberi perlakuan peroral selama 49 hari, pada hari ke 50 diambil darahnya untuk pemeriksaan kadar testosteron, kemudian dikorbankan dan diambil testisnya untuk dibuat preparat histologik. Pengukuran kadar testosteron dilakukan dengan metoda ELISA (Immulite Total Testosteron), sedangkan pembuatan preparat histologik dilakukan dengan metoda parafin dan pewarnaan H-E.

Kadar testosteron terlihat menurun pada kelompok perlakuan MSG, tetapi pengujian secara statistik dengan analisis varian menunjukkan perbedaan yang tidak bermakna ($p=0,924$). Terjadi pengecilan diameter inti dan penurunan jumlah sel Leydig pada kelompok perlakuan MSG secara bermakna ($p<0,05$). Pengamatan terhadap berat testis pada keempat kelompok menunjukkan perbedaan yang tidak bermakna ($p=0,449$). Kesimpulan, pemberian MSG pada tikus putih jantan dewasa tidak mempengaruhi kadar testosteron darah dan berat testis, tetapi mengecilkan diameter inti dan menurunkan jumlah sel Leydig.

Kata kunci : MSG, testosteron, sel Leydig, testis, *Rattus Norvegicus*

ABSTRACT

Glutamate is main component of Monosodium Glutamate (MSG), which included in excitotoxins. Many studies indicated that administration of MSG to experimental animal caused reproduction and multiple endocrine dysfunction. This study was conducted to investigate the effects of MSG in adult male rats on blood testosterone concentration, nucleus diameter, number and morphology of Leydig cells.

Twenty four healthy male rats, 10-12 weeks old and 150-190 gram body weight were used. They were divided into 4 groups. Each group consisted of six rats. Before treatment, they were aclimatitized during ten days. Group I, control was given aquadest 3ml/day. Group II, III, IV treatment with MSG 2400, 4800 and 9600 mg/kgBW/day, respectively. Treatment was given orally during 49 days, on 50^{th} day after cessation of treatment, rats blood was taken for measurement of testosterone concentration, then they were killed and testis was taken out for slice of microscopics smear to measure Leydig cells. The measurement of testosterone concentration was performed by ELISA method (Immulite Total Testosterone), whereas slice of microscopics smear was made by parafin method and H-E staining.

Blood testosterone concentration of group given of with MSG decreased, but no significant statistically ($p=0,924$). Diameter of nucleus and number of Leydig cells decreased in group treatment with MSG significantly ($p<0,05$). There were no significant differences of testis weight among groups ($p=0,449$). Conclusion, administration of MSG in adult male rats had no effect on blood testosterone concentration and testis weight, but reduced diameter of nucleus and number of Leydig cells.

Key words : MSG, testosterone, Leydig cell, testis, *Rattus Norvegicus*