Studi virulensi trypanosoma evansi isolat indonesia dengan penentuan marka molekular DNA mikrosatelit dan analisis profil sitokin pada mencit Mus musculus = Virulence study of trypanosoma evansi isolates from Indonesia and identification of molecular marker based on microsatellite DNA and cytokine profile analyses in mice Mus musculus

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Abstrak

ABSTRAK
Pendahuluan :Trypanosoma evansi adalah protozoa berflagella yang bersirkulasi di dalam darah secara ekstraseluler sebagai agen penyakit Surra serta menyerang seluruh hewan vertebrata, serta berpotensi sebagai zoonosis. Informasi virulensi isolat T. evansi sangat dibutuhkan untuk penentuan strategi pengobatan Surra di daerah wabah dan endemis. Penelitian ini bertujuan untuk mengetahui variasi virulensi isolat T. evansi yang dikoleksi dari berbagai wilayah di Indonesia termasuk memperoleh marka genetik serta mengetahui profil sitokin pada mencit. Disamping itu, dilakukan juga uji serologis pada peternak di daerah wabah Surra Metode : Sebanyak 32 isolat lokal T. evansi dikonfimasi dengan PCR multiplex (ITS-1; Te Ro Tat 1,2 VSG dan ESAG6/7), selanjutnya diuji virulensinya dengan menginfeksikan104 parasit pada mencit galur DDY. Studi genotyping populasi T. evansi dievaluasi dengan 8 marka mikrosatelit Tbb-1, Tbb-5, Tbb-9, Tbb-10, MORF2-CA, M6C8-CA, MEST-19AT, MT3033-AT. Dua isolat yang berbeda virulensi (tinggi-Bang87 dan rendah-Pml 287) dipilih untuk uji imunopatogenitas sedangkan serum peternak diuji dengan metode FELISA dan CATT T. evansi. Hasil : Dari 32 isolat tersebut terbagi menjadi 17 isolat bervirulensi tinggi, 11 isolat bervirulensi moderat dan 4 isolat bervirulensi rendah dengan 8 pola tingkat parasitemia. Analisis Neigbour Joining (NJ) terhadap 8 lokus berdasarkan Multi Lokus Genotipe (MLG) mikrosatelit terbagi menjadi 4 populasi, yaitu MLG A, MLG B, MLG C dan MLG D. Analisis terhadap struktur populasi juga memberikan hasil yang sama dengan terbentuknya 4 klaster. Hasil ini juga membuktikan bahwa marka yang digunakan bersifat spesifik lokasi. Sebanyak tiga marka mengindikasikan adanya asosiasi antara virulensi dan MLG (Tbb-1, M6C8-CA dan MEST-19). Kadar IFN-γ meningkat secara tajam pada mencit yang diinfeksi isolat Bang 87 pada 4hpi berkorelasi negatif yang signifikan ($p<0,05$) dengan kadar IL-10, sedangkan pada mencit yang diinfeksi isolat Pml 287, peningkatan kadar IFNγ berkorelasi positif dengan kadar IL-10. Kematian dini pada mencit yang diinfeksi isolat Bang 87 disebabkan oleh sindrom respon inflamasi sitemik. Hasil uji serologis menunjukkan bahwa 4 dari 24 serum peternak (16,67%) didaerah wabah positif dan seluruh serum negatif untuk

daerah non wabah.
Kesimpulan : Variasi virulensi T. evansi isolat Indonesia memiliki karakter molekular yang berbeda serta menginduksi pola mediator sitokin pro dan antiinflamasi yang berhubungan dengan pola manifestasi patologi yang berbeda. Marka mikrosatelit pada studi ini mampu mengidentifikasi asal usul sumber infeksi, dan tingkat virulensi isolat yang sedang bersirkulasi. Surra berpotensi sebagai emerging zoonosis, terutama bagi peternak didaerah wabah dan endemis.
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