Effect of Thymosin-α1 on level of serum immunoglobulin and T lymphocyte subsets in aged patients with severe community-acquired pneumonia

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View from specialist: It is creative, and of certain scientific and educational value.

[ABSTRACT] Objective: To investigate effect of Thymosin-α1 on level of serum immunoglobulin and T lymphocyte subsets in aged patients with severe community-acquired pneumonia (SCAP). Methods: A total of 142 elderly patients with SCAP were divided into the routine treatment groups and the Thymosin treatment groups according to the different treatment methods by half. Patients in the routine treatment groups were given with anti infection and symptomatic and supportive treatment, orotracheal intubation ventilator assisted ventilation. Patients in Thymosin treatment groups given with Thymosin-α1 injection based on the routine treatment groups. The level of serum immunoglobulin and T lymphocyte subsets before and after treatment and survival of two groups were compared. Results: The total effectiveness in the Thymosin treatment groups after 1 weeks were 61.97%, significantly higher than that of the conventional treatment groups 47.89% (χ² = 7.15, P = 0.026) and the cumulative survival rate within 30 d after treatment was 57.9% significantly higher than that of the conventional treatment groups 33.2% (χ² = 10.86, P = 0.013). The levels of CD4⁺ level and the CD4⁺/CD8⁺ ratio in the Thymosin treatment groups were significantly higher than those of before treatment and the routine treatment groups after treatment while the level of CD8⁺ were significantly lower than that of before treatment and the routine treatment groups after treatment (P < 0.05). There was no significant difference in level of IgA, IgG, IgM and complement C3, C4 immunoglobulin between the two groups after 1 weeks of treatment (P > 0.05). Conclusions: Thymosin-α1 could significantly improve the cumulative survival rate of elderly patients with SCAP. It may be because that thymalfasin promote intrathymic bone marrow stem cells, then stimulate CD4⁺ lymphocyte to produce the relevant.

[KEY WORDS] Elderly; Immunoglobulin; Thymosin-α1; T lymphocyte subsets; Severe community-acquired pneumonia