and much more trained doctors and nurses, more expensive apparatus and instruments are necessary. And yet, the operation fee is evaluated again only 2,030 points.

In other words, the operation fee for the mitral valvular diseases is extremely under-evaluated by the present insurance system and the expense from the patients themselves is also not so inexpensive, particularly for young people who is most often attacked by these diseases. (Figure 6)

Therefore, the patients suffering from rheumatic heart disease and the various medical clinics to treat them should be more financially supported by the nation budget.

Fig. 6. Age and Sex Distribution at the Time of First Mentioning of the Disease.

5. Rheumatic Heart Disease as an Economical Disease Comment from the Pediatric Point of View†

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RHEUMATIC fever is considered to be a main cause of valvular heart disease. According to our statistical results¹⁾, rheumatic fever shows the highest incidence in schoolage with a peak at 10 years of age, that is to say, rheumatic fever is a disease of pediatric field.

In the author's series¹⁾, rheumatic carditis occurred in 65 per cent of the total cases of rheumatic fever.

In cases which did not have carditis at the

initial attack, carditis did not occur in their recurrent attacks with only a few exception. This results suggests that it is very most important to give an appropriate treatment to the cases of rheumatic fever with carditis at their first attack.

That is in rheumatic fever with carditis the first attack is most important concerning their prognosis.

Table I shows the results of steroid hormone

TABLE I DISAPPEARANCE OF CARDIAC MURMUR AFTER THE STEROID HORMONE TREATMENT IN RELATION WITH THE DOSIS OF STEROID HORMONE AND THE INTERVAL BETWEEN THE ONSET OF THE DISEASE AND THE START OF TREATMENT

Weeks after onset	within 2 w.		2-6 w.		more than 6 w.	
Large dosis	8/8	100%	10/14	71.3%	11/27	40.7%
Moderate dosis	3/3	100%	6/8	75.0%	2/13	15.4%
Small dosis			0/4	0	1/9	11.1%

TABLE II THE SCHEDULE OF TREATMENT OF RHEUMATIC FEVER

	1st week	2	3	4	5	6	7	8	9	10
with carditis	40	35	30	25	20	15	10	7.5	5	2.5 mg (prednisolone)
without carditis	100-130 mg/kg/day 8 weeks (Aspirin equivalent)									

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treatment for the cases with rheumatic carditis which were followed up more than three years²⁾. Only the cases of the first attack were studied. Schedule of treatment is as in Table II.

In all cases in which the steroid hormone treatment was started within 2 weeks after the onset of the disease, cardiac murmur disappeared within several months after the administration of the drug. In the cases in which steroid hormone treatment was started between 2 and 6 weeks, cardiac murmur disappeared in about three fourth of the cases. In the cases in which the treatment delayed after 6 weeks from the onset of the disease, cardiac murmur disappeared only in few cases.

These results suggests that large dosis of steroid hormone administered within 6 weeks after the onset of the disease is necessary in the treatment of rheumatic carditis. We can say that the fact whether the appropriate treatment was performed or not to the cases with rheumatic carditis may dominate the patients' life.

Fig. 1 shows an economical and social loss caused by rheumatic carditis. The patients of rheumatic carditis who recovered without residual cardiac damage can come back to active life. But the cases with residual cardiac damage have a loss of medical expense and unemployed loss, and worst still many patients die of rheumatic valvular heart disease.

Even in slightly or moderately damaged patients, they must have some limitation in their social life because of their physical handi-

cap. Some patients could not enter an upper school and the others could not get their occupation.

The prophylaxis of recurrence of rheumatic fever is also an important measure. Cardiac damage becomes worse by the recurrence of rheumatic fever. It needs some expense for the prophylaxis and also they must receive physical check by physicians regularly. But the medical expense needed by the treatment of the recurrent attack of rheumatic fever may be far larger than that of prophylactic measure. That recurrence rate of rheumatic fever reached approximately 60 per cent:

The rheumatic carditis with an insidious onset³⁾ has a clinical significance.

This type of rheumatic carditis advances without manifest clinical signs of rheumatic fever such as high fever, polyarthrititis and/or chorea. This type of carditis is often shows only some slighter signs such as low grade fever, anemia or palpitation and so on. The patient often do not consult to a physician and they lose their healing chance of rheumatic carditis that is only in initial stage.

But the laboratory findings of rheumatic carditis with an insidious onset was as in Table III. High incidence of increased sedimentation rate and also high AS-O value were found.

The early detection of the rheumatic carditis of such type is important for the patients' prognosis and also for the decrease of incidence of rheumatic valvular heart disease.

Fig. 1. Socioeconomical loss of rheumatic carditis.

TABLE III LABORATORY FINDINGS IN RHEUMATIC CARDITIS WITH AN INSIDIOUS ONSET

	<i>Nr. exam.</i>	<i>Nr. positive.</i>	<i>percent</i>
<i>Increased Sed. Rate</i>	38	37	97.4
<i>Positive CRP</i>	19	16	84.2
<i>Elevated AS-O</i>	29	19	65.6
<i>Leucocytosis</i>	18	6	33.3
<i>P-R prolongation</i>	23	10	43.5
<i>Cardiac enlargement</i> (CTR more than 0.55)	31	23	74.2

In Japan Health Insurance covers only a half of its medical expenses for children. The medical expenses for the treatment of rheumatic carditis is somewhat expensive because the administration of steroid hormone and the necessity of hospital admission.

Rheumatic carditis is a curable disease without cardiac damage when a correct treatment is given for them. Rheumatic carditis tends to become severer specially in the socially low class.

The necessity of public charge for the medical expense in the treatment of rheumatic carditis is urged.

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6. Social-Economic Problems of Rheumatic Fever†

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RHEUMATIC fever causes many social-economic problems because:

- (1) it needs often massive, long-durated corticosteroid therapy,
- (2) it is often complicated by a heart disease,
- (3) it has high possibility of recurrence at any time,
- (4) it also has some possibility of occurrence of subacute bacterial endocarditis if a rheumatic heart disease exists.

The average total medical expense among the cases of acute rheumatic fever in Kyushu University Hospital is about 80,000 (60,000–100,000) yen. After discharge, namely, in the inactive stage, it is necessary about 11,000 yen per year for oral penicillin and various examinations such as radiography, phonocardiography, electrocardiography, E.S.R., C.R.P. and ASL-O. If a cardiac catheterization is performed, more 15,000 yen is necessary. In case

a patient does not have a medical insurance, above mentioned amount will be more than doubled.

In order to minimize such a great expense, I would stress the necessity of correct diagnosis following the Revised Jones Criteria (1965), the necessity of choosing proper dosis and duration of corticosteroid therapy and the necessity of strict administration of oral penicillin for prevention of recurrence following the recommendation of the American Heart Association.

In order to make a proper diagnosis of carditis or rheumatic heart disease and to make appropriate evaluations of severity, course and prognosis of them, the phonocardiography is especially useful, although radiography and electrocardiography are also necessary simultaneously.

Finally, as a political solution of this economic problem, a full coverage of medical insur-

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