Cefuroxime axetil (CXM-AX) の皮膚組織内濃度と臨床効果の検討

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新しい経口用セファロスポリン剤 Cefuroxime axetil (CXM-AX, SN 407) について基礎的ならびに臨床的検討を行い以下の成績を得た。

1. CXM-AX 250 mg および 500 mg 経口投与後 120～150 分後の平均血清中濃度はそれぞれ 3.25, 4.30 μg/ml, 平均皮膚組織内濃度は 1.46, 2.14 μg/g であり, その移行率は 44.9, 59.5%

を示し，250 mg 投与と 500 mg 投与の間で dose response が認められた。

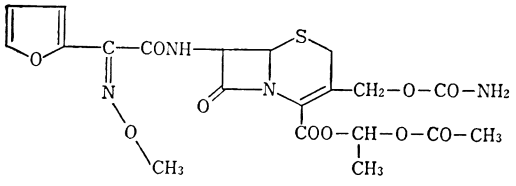
2. 臨床効果を検討し得た 234 例中，治癒 122 例，著しく改善 58 例，改善 28 例，やや改善 20 例，不変 5 例，増悪 1 例で改善以上の有効率は 88.9% であった。また，疾患群別の改善以上の有効率は I 群 81.4% (35/43)，II 群 92.5% (37/40)，III 群 95.7% (22/23)，IV 群 90.9% (40/44)，V 群 94.6% (53/56)，VI 群 75.0% (21/28) であった。

3. 細菌学的には 169 例に起炎菌が分離され，効果判定可能例 143 例の菌消失率は 92.3% (132 例) であった。また，分離頻度が多かった *S. aureus* 96 株，*coagulase negative staphylococci* (CNS) 39 株に対する Cefuroxime (CXM) の MIC のピークはそれぞれ 1.56, 0.78 μg/ml であり，Cephalexin (CEX) より優れ，Cefaclor (CCL) とほぼ同等の抗菌力を示した。

4. 安全性の検討を行った 245 例中 17 例 (6.9%) に副作用がみられ，下痢，軟便，胃痛などの消化器症状が主であった。臨床検査値異常は，WBC の減少 2 例 (1.4%)，好酸球増多 1 例 (0.7%)，トランスアミナーゼの上昇 7 例 (5.0%)，クームス (直接) 陽性 1 例 (5.6%) の計 11 例にみられた。

Cefuroxime axetil (CXM-AX, SN 407) は英国グラクソ社で開発された経口用セファロスポリン系抗生物質で，その化学構造は Fig. 1 に示す如く経口投与によりほとんど吸収されなかった Cefuroxime (CXM) の 1-acetoxyethyl ester 誘導体である。本剤はそれ自体にほとんど抗菌作用はなく，経口投与された CXM-AX は腸管内で脱エステル化されて CXM として抗菌作用を示す。

Fig. 1 Chemical structure of CXM-AX



CXM の抗菌作用についてはすでに第 26 回日本化学療法学会総会および第 33 回日本化学療法学会西日本支部総会新薬シンポジウムにおいて発表され[1,2]，その抗菌スペクトルは本剤が β-lactamase に安定であるので，従来の経口用セファロスポリン剤より広く，これまで効果の期待できなかった *E. coli*, *Klebsiella* のセファロスポリン耐性株や *Citrobacter*, *Proteus*, *Enterobacter* にも抗菌作用を示し，*H. influenzae* や *N. gonorrhoeae* に対しては従来の経口用セファロスポリン剤に比して強い抗菌力を有するが，緑膿菌に対しては抗菌作用を示さないと報告されている。

今回，われわれは本剤の皮膚組織への移行および浅在性化膿性疾患に対する臨床的検討を行ったのでその成績を報告する。

I. 皮膚組織への移行

1. 対象および方法

昭和 59 年 9 月から昭和 60 年6月までに東京大学，関東労災病院および高知医科大学の皮膚科外来を受診した 57 例を対象とした。早朝空腹時または朝食摂取後 CXM-AX 250 mg または 500 mg を 1 回投与し，投与後 60～320 分に血清および皮膚組織を採取し，新日本実業(株)東京研究所にて濃度測定を実施した。

CXM の濃度測定は血清が *B. subtilis* ATCC 6633 を検定菌とする薄層ディスク法により測定し，標準曲線は Moni-Trol I (米国デイド社) で作製した。

また，皮膚組織は *S. pyogenes* IID 697 を検定菌とする重層法により測定し，組織はこれに 1/20 M リン酸塩緩衝液 (pH 6.0) を 3 倍量加えたうえ，ホモジェナイズし，遠沈後の上清を測定に供した。標準曲線は同緩衝液で作製した。

2. 成績

CXM-AX 250 mg を経口投与した際の CXM 血清中濃度および皮膚組織内濃度は Table 1 に示す如く，投与後 60～250 分の血清中濃度は <0.39～4.28 μg/ml，皮膚組織内濃度は 0.15～3.85 μg/g，移行率は 13.0～232.1% であった。

また，CXM-AX 500 mg を経口投与した際の CXM 血清中濃度および皮膚組織内濃度は Table 2 に示す如く，投与後 60～320 分で血清中濃度は <0.39～10.2 μg/ml，皮膚組織内濃度は <0.20～3.91 μg/g，移行率は 9.5～124.5% であった。

250 mg 投与と 500 mg 投与の比較では検討症例の多い 120～150 分の平均値で血清中濃度がそれぞれ 3.25, 4.30 μg/ml，皮膚組織内濃度が 1.46, 2.14 μg/g，移行率が 44.9, 59.5% を示し，250 mg 投与と 500 mg 投与との間で dose response が認められた。

II. 臨床効果の検討

1. 対象および方法

Table 1 Skin and serum concentrations of CXM after oral single 250 mg administration

No.	Time (min.)	Concentration			Ratio
		Serum (μg/ml)	(Sampling time : min.)	Skin (μg/g)	Skin/Serum (%)
1	60	*N.D.		3.20	—
2	60	0.81		1.88	232.1
3	60	2.09	(45)	1.95	93.3
4	70	N.D.	(60)	3.85	—
5	70	0.28	(60)	0.21	75.0
6	90	3.18	(60)	0.80	25.2
7	130	4.19	(120)	2.03	48.4
8	135	2.38	(120)	0.88	37.0
9	135	3.72	(120)	2.76	74.2
10	135	3.22	(120)	2.60	80.7
11	140	3.24	(120)	0.63	19.4
12	140	4.19	(120)	0.88	21.0
13	140	4.28	(120)	1.92	44.9
14	140	3.13	(120)	2.44	78.0
15	150	2.17	(120)	1.20	55.3
16	150	2.53	(120)	0.33	13.0
17	150	3.03	(120)	0.87	28.7
18	150	2.04	(135)	0.94	46.1
19	150	4.07	(120)	1.52	37.3
20	230	<0.39	(225)	0.15	—
21	250	0.89	(240)	0.24	27.0
22	250	0.68	(240)	1.40	205.9

*N.D. : Not detected

1) 対象

昭和 59 年9月から昭和 60 年6月までに Table 3 に示した 12 施設における皮膚科の入院および外来受診患者で浅在性化膿性疾患の診断を受けた 16 歳以上 70 歳未満の患者を対象とした。ただし，15 歳以下の7例は全例体重が 45 kg 以上であり，また，70 歳以上の6例は重篤な基礎疾患を有していなかったのでこれら 13 例を加えた計 250 例を評価対象とした。このうち併用薬違反5例および投与前抗生剤の影響があった1例の計6例を除外し，初診日以降来院しなかった5例および治癒以外の何らかの理由で3日以内に投与を中止した5例（投与2日目以降来院せず2例，投与3日目以降手術のため中止1例，投与2日目以降副作用のため中止2例）計10例を脱落とし，これら 16 例を除いた 234 例について臨床効果および有用性の評価を行った。

また，安全性については初診日以降来院しなかった5

Table 2 Skin and serum concentrations of CXM after oral single 500 mg administration

No.	Time (min.)	Concentration			Ratio
		Serum (μg/ml)	(Sampling time : min.)	Skin (μg/g)	Skin/Serum (%)
1	60	0.60		<0.28	—
2	60	2.43		0.84	34.6
3	60	5.12		0.84	16.4
4	60	2.18		<0.20	—
5	75	1.65	(70)	0.81	49.1
6	80	4.95		0.47	9.5
7	120	5.44	(135)	3.60	66.2
8	125	3.24		2.25	69.4
9	130	3.57	(120)	3.91	109.5
10	130	7.81	(120)	3.23	41.4
11	130	N.D.	(120)	0.70	—
12	135	8.05	(130)	1.72	21.4
13	135	2.53		3.15	124.5
14	135	<0.39	(120)	2.17	—
15	135	1.92		1.60	83.3
16	140	10.2	(120)	3.15	30.9
17	140	6.18	(120)	1.38	22.3
18	150	5.97	(120)	1.44	24.1
19	150	2.00	(120)	0.77	38.5
20	150	2.68	(125)	2.10	78.4
21	150	4.77	(140)	2.47	51.8
22	150	1.47	(120)	0.38	25.9
23	150	1.45		1.58	109.0
24	150	5.41		2.96	54.7
25	160	7.56		3.22	42.6
26	160	*N.D.	(120)	0.11	—
27	170	3.67		2.84	77.4
28	180	6.51		0.67	10.3
29	180	6.32		3.60	57.0
30	190	3.80		1.90	50.0
31	210	2.05		1.03	50.2
32	240	3.49		1.85	53.0
33	300	2.87		1.12	39.0
34	300	2.52		1.45	57.5
35	320	1.04		0.30	28.8

*N.D. : Not detected

Table 3 Institutes attended to the study

Department of Dermatology, Faculty of Medicine, University of Tokyo
Department of Dermatology, School of Medicine, Teikyo University
Department of Dermatology, Kanto Teishin Hospital
Department of Dermatology, Kochi Medical University
Department of Dermatology, School of Medicine, Hokkaido University
Department of Dermatology, Japanease Red Cross Medical Center
Department of Dermatology, School of Medicine, Toho University
Department of Dermatology, Kanto-Rosai Hospital
Department of Dermatology, Kansai Medical University
Department of Dermatology, Okayama University Medical School
Department of Dermatology, School of Medicine, Fukuoka University
Department of Dermatology, Faculty of Medicine, Kyushu University

例を除く 245 例について評価を行った。

対象疾患については病変の経過と治療効果が近縁と考えられる次の6群に分類した。

Ⅰ群：毛嚢（包）炎，膿疱性痤瘡

Ⅱ群：癰，癰腫症，よう

Ⅲ群：伝染性膿痂疹，膿痂疹性湿疹

Ⅳ群：丹毒，蜂巣炎，リンパ管炎，瘭疽，化膿性爪囲炎

Ⅴ群：皮下膿瘍，化膿性汗腺炎，集簇性痤瘡，感染性粉瘤

Ⅵ群：熱傷・外傷・手術創などの二次感染，感染性褥瘡

各疾患群例の症例一覧を Table 4 に示す。

2) 投与方法

1錠中に CXM-AX 250 mg（力価）を含有する白色錠剤を使用し，原則として1回 250 mg または 500 mg を1日2～3回毎食後経口投与した。治癒症例以外は原則として 14 日間連続投与とした。

3) 臨床評価および検査

投与開始日，3日目（2～4日目），7日目（5～8日目），10 日目（9～11 日目），14 日目（12～16 日目）に次の各評価項目の観察を行った。

① 自・他覚所見

対象疾患群別の評価の項目は次のとおりとした。

第Ⅰ群：丘疹，膿疱，硬結

第Ⅱ群：自発痛，圧痛，発赤，腫脹，硬結

第Ⅲ群：水疱，びらん，発赤，発疹新生

第Ⅳ群：自発痛，圧痛，発赤，腫脹，硬結

第Ⅴ群：自発痛，圧痛，発赤，腫脹，硬結

第Ⅵ群：自発痛，圧痛，発赤，腫脹，膿苔付着，浸出液

② 自・他覚所見の程度

すべての項目について次の5段階で評価した。

0：なし

1：軽度

2：中等度

3：高度

③：高度から増悪した場合

③ 全般改善度

観察日毎に投与前と比較した自覚症状・他覚所見の改善を次の6段階で評価した。

卅：治癒

卅：著しく改善

廾：改善

＋：やや改善

0：不変

×：増悪

④ 重症度

投与開始日に皮膚症状および全身症状から次の3段階で評価した。

1：軽症

2：中等症

3：重症

⑤ 副作用

副作用のみられた場合は，その種類，程度，発現日，薬剤との関係，処置，経過などを調査表に記載し，次の3段階で評価した。

＋：軽度（そのまま投薬継続）

廾：中等度（他処置を併用して投薬継続）

卅：重度（投薬中止を必要とする程度）

⑥ 臨床検査

投与開始時および終了時に可能なかぎり臨床検査を行

Table 4-1 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
1	M 25	Folliculitis	Moderate	Aggravated	—	250× 3	14.0	C N S	3.13	—		Eliminated	Remarkably improved	Moderately useful	—	
2	F 20	Folliculitis	Moderate	Aggravated	—	250× 3	6.0	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	
3	M 37	Folliculitis	Moderate	Aggravated	—	250× 3	13.0					Unknown	Cured	Remarkably useful	—	
4	M 29	Folliculitis	Moderate	Aggravated	—	500× 3	14.0	*S. aureus*	1.56	—		Eliminated	Moderately improved	Moderately useful	—	
5	F 43	Folliculitis	Mild	Aggravated	—	250× 3	7.0	*P. acnes*	0.1	—		Eliminated	Cured	Remarkably useful	—	
6	M 45	Folliculitis	Mild	Aggravated	—	250× 3	4.0	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	
7	M 19	Folliculitis	Mild	Aggravated	—	500× 3	4.0	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	
8	F 21	Folliculitis	Severe	Aggravated	—	500× 3	11.0	CNS	0.39	—		Eliminated	Moderately improved	Slightly useful	—	
9	M 36	Folliculitis	Severe	Remarkably aggravated	—	500× 3	12.0	*M. roseus*	0.05	—		Eliminated	Remarkably improved	Moderately useful	—	
10	F 62	Folliculitis	Mild	Stationary	—	500× 2	7.0	*S. aureus*	0.78	—		Eliminated	Cured	Remarkably useful	—	
11	F 25	Folliculitis	Moderate	Remarkably aggravated	—	500× 2	3.5	*M. roseus*	0.05	—		Eliminated	Remarkably improved	Moderately useful	—	
12	M 46	Folliculitis	Moderate	Stationary	—	500× 3	7.0					Unknown	Cured	Remarkably useful	—	
13	F 36	Folliculitis	Moderate	Aggravated	—	250× 3	5.3	*S. aureus*	6.25	—		Eliminated	Remarkably improved	Moderately useful	—	

Table 4-2 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
14	F 46	Folliculitis	Moderate	Aggravated	−	250× 3	7.3					Unknown	Cured	Remarkably useful	−	
15	F 22	Folliculitis	Moderate	Stationary	−	250× 3	4.0					Unknown	Cured	Remarkably useful	−	
16	M 29	Folliculitis	Moderate	Aggravated	−	250× 3	10.0	*S. aureus*	0.78	−		Eliminated	Cured	Moderately useful	−	
17	M 77	Folliculitis	Moderate	Aggravated	−	250× 3	1.3								−	Dropped out
18	M 33	Folliculitis	Moderate	Aggravated	−	500× 3 500× 2	13.7	*P. acnes*	0.1	−		Eliminated	Slightly improved	Slightly useful	+	
19	M 67	Folliculitis	Mild	Aggravated	CFT	500× 2	12.0	*S. aureus*	12.5	−		Eliminated	Cured	Remarkably useful	−	
20	M 45	Folliculitis	Moderate	Aggravated	−	500× 3	6.0	*S. aureus*	0.39	−		Eliminated	Cured	Remarkably useful	−	
21	M 24	Folliculitis	Moderate	Aggravated	−	500× 2	3.0	*S. aureus*	0.78	−		Eliminated	Cured	Remarkably useful	−	
22	F 52	Folliculitis	Mild	Stationary	−	250× 3	10.0	*S. aureus*	50	−		Eliminated	Moderately improved	Moderately useful	−	
23	M 66	Folliculitis	Mild	Aggravated	−	500× 2	7.5	*S. aureus*	1.56	−		Eliminated	Cured	Remarkably useful	−	
24	F 58	Folliculitis	Moderate	Aggravated	−	250× 3	7.0	*S. aureus*	>100	−		Eliminated	Remarkably improved	Moderately useful	−	
25	F 43	Folliculitis	Mild	Aggravated	−	250× 3	5.0					Unknown	Moderately improved	Moderately useful	−	
26	M 28	Folliculitis	Mild	Aggravated	−	250× 3	4.0	*S. aureus*	3.13	−		Eliminated	Cured	Remarkably useful	−	

Table 4-3 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
27	M 45	Folliculitis	Moderate	Aggravated	−	500× 2	2.0	*S. aureus*	3.13			Unknown	Unchanged	Useless	−	
28	F 59	Folliculitis	Moderate	Stationary	−	250× 3	4.0	*S. aureus*	0.78			Unknown	Remarkably improved	Moderately useful	−	
29	M 34	Folliculitis	Mild	Aggravated	−	250× 3	4.3	*S. aureus*	1.56	−		Eliminated	Moderately improved	Moderately useful	−	
30	M 18	Folliculitis	Moderate	Aggravated	−	250× 3	15.3					Unknown	Cured	Remarkably useful	−	
31	M 23	Folliculitis	Severe	Aggravated	−	500× 2	16.0	CNS	0.78			Unknown	Remarkably improved	Remarkably useful	−	
32	F 28	Pustular acne	Moderate	Aggravated	−	250× 3	6.0	*S. aureus*	50	−		Eliminated	Remarkably improved	Moderately useful	−	
33	F 21	Pustular acne	Severe	Aggravated	−	250× 3	16.0	CNS	0.39	−		Eliminated	Remarkably improved	Moderately useful	−	
34	M 14	Pustular acne	Severe	Aggravated	−	500× 2	14.0					Unknown	Slightly improved	Slightly useful	−	
35	F 21	Pustular acne	Moderate	Aggravated	−	250× 3	15.0	*P. acnes*	0.2	−		Eliminated	Moderately improved	Slightly useful	+	
36	M 29	Pustular acne	Moderate	Aggravated	−	500× 3	14.0					Unknown	Unchanged	Useless	−	
37	F 22	Pustular acne	Moderate	Aggravated	−	500× 2	13.0								−	Dropped out
38	F 21	Pustular acne	Moderate	Aggravated	−	500× 2	14.5					Unknown	Slightly improved	Slightly useful	−	
39	F 26	Pustular acne	Moderate	Aggravated	−	250× 3	7.0								+	Dropped out

Table 4-4 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
40	M 23	Pustular acne	Mild	Stationary	–	250× 3	11.3	CNS	0.39	–		Eliminated	Cured	Remarkably useful	–	
41	F 18	Pustular acne	Moderate	Tendency to remission	–	250× 3	12.7	CNS	0.39			Unknown	Slightly improved	Slightly useful	–	
42	F 18	Pustular acne	Moderate	Aggravated	–	250× 3	12.3					Unknown	Slightly improved	Slightly useful	–	
43	M 21	Pustular acne	Moderate	Aggravated	–	250× 3	13.7	*P. acnes*	0.1	–		Eliminated	Slightly improved	Slightly useful	–	GOT ↑ GPT ↑
44	M 18	Pustular acne	Moderate	Aggravated	–	500× 2	15.0	*S. intermedius* *P. magnus*	0.78 0.1	–		Eliminated	Moderately improved	Slightly useful	–	
45	F 21	Pustular acne	Moderate	Stationary	–	500× 2	14.0	*P. acnes*	0.1	–		Eliminated	Moderately improved	Slightly useful	–	GPT ↑
46	F 25	Pustular acne	Moderate	Aggravated	–	250× 3	15.0	*S. aureus*	1.56	–		Eliminated	Remarkably improved	Moderately useful	–	
47	M 54	Furuncle	Moderate	Aggravated	–	250× 3	7.0	*S. aureus*	0.78	–		Eliminated	Remarkably improved	Moderately useful	–	
48	F 16	Furuncle	Moderate	Aggravated	–	250× 3	8.0	*S. aureus*	1.56	–		Eliminated	Cured	Moderately useful	–	
49	F 19	Furuncle	Moderate	Aggravated	–	250× 3	6.0	*S. aureus*	1.56	–		Eliminated	Cured	Remarkably useful	–	
50	M 32	Furuncle	Severe	Aggravated	–	500× 3	7.0					Unknown	Cured	Remarkably useful	–	
51	M 69	Furuncle	Moderate	Aggravated	CCL	500× 3	14.0	*S. aureus*	>100			Unknown	Remarkably improved	Moderately useful	–	
52	M 52	Furuncle	Moderate	Aggravated	–	250× 3	10.3	CNS	0.78	–		Eliminated	Cured	Remarkably useful	–	

Table 4-5 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
53	F 20	Furuncle	Moderate	Aggravated	—	500× 3	5.0					Unknown	Remarkably improved	Remarkably useful	—	
54	F 60	Furuncle	Severe	Remarkably aggravated	—	500× 3	9.0	*S. constellatus*	0.05	—		Eliminated	Cured	Remarkably useful	—	
55	M 44	Furuncle	Severe	Aggravated	—	250× 3	5.0	CNS *S. sanguis*	0.39 0.2	—		Eliminated	Cured	Remarkably useful	—	
56	M 51	Furuncle	Moderate	Aggravated	—	500× 3	5.0	CNS	0.78	—		Eliminated	Cured	Remarkably useful	—	
57	F 25	Furuncle	Moderate	Stationary	—	250× 3	6.3	CNS	0.78	—		Eliminated	Cured	Remarkably useful	—	
58	M 65	Furuncle	Severe	Aggravated	—	250× 3	10.0	CNS *E. faecalis*	12.5 50	—		Eliminated	Cured	Remarkably useful	—	
59	F 51	Furuncle	Severe	Aggravated	—	250× 3	6.0	*Corynebacterium*	0.1	—		Eliminated	Cured	Remarkably useful	+	
60	F 45	Furuncle	Moderate	Remarkably aggravated	—	500× 3	10.0	*S. aureus*	0.78			Unknown	Moderately improved	Remarkably useful	—	
61	M 67	Furuncle	Moderate	Aggravated	—	500× 3	7.0					Unknown	Remarkably improved	Moderately useful	—	
62	F 49	Furuncle	Moderate	Aggravated	—	250× 3	8.0	*S. aureus*	1.56	*S. aureus*	6.25	Unchanged	Cured	Remarkably useful	—	
63	M 53	Furuncle	Moderate	Remarkably aggravated	—	500× 2	14.5	CNS	0.78	—		Eliminated	Cured	Remarkably useful	—	
64	F 28	Furuncle	Severe	Aggravated	—	500× 3	7.0	*S. aureus*	1.56	*S. aureus*	1.56	Unchanged	Moderately improved	Slightly useful	+	
65	F 26	Furuncle	Severe	Aggravated	—	500× 3	11.7	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	

Table 4-6 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
66	F 21	Furuncle	Moderate	Aggravated	−	500× 2	9.5					Unknown	Cured	Moderately useful	−	
67	M 23	Furuncle	Moderate	Aggravated	−	500× 2 250× 2	11.5	*S. aureus*	>100	−		Eliminated	Cured	Moderately useful	−	
68	M 56	Furuncle	Moderate	Aggravated	−	500× 2	2.5					Unknown	Slightly improved	Slightly useful	+	
69	F 31	Furuncle	Moderate	Aggravated	−	500× 3	10.0	*S. aureus*	>100	−		Eliminated	Cured	Moderately useful	−	
70	M 19	Furuncle	Moderate	Aggravated	−	250× 3	3.3	*Corynebacterium*	0.2	−		Eliminated	Remarkably improved	Moderately useful	−	
71	M 33	Furunculosis	Moderate	Aggravated	−	250× 3	10.0					Unknown	Unchanged	Useless	−	
72	F 37	Furunculosis	Severe	Aggravated	−	250× 3	12.3	*S. aureus*	1.56	−		Eliminated	Remarkably improved	Remarkably useful	−	
73	F 23	Furunculosis	Moderate	Tendency to remission	−	500× 3	14.0	*S. aureus*	50	−		Eliminated	Cured	Moderately useful	−	
74	F 11	Furunculosis	Moderate	Aggravated	−	500× 3	5.0	*S. aureus*	1.56			Unknown	Moderately improved	Remarkably useful	−	
75	M 57	Furunculosis	Moderate	Aggravated	−	500× 3	7.0	*S. aureus*	>100			Unknown	Slightly improved	Remarkably useful	−	
76	F 64	Furunculosis	Moderate	Aggravated	−	500× 3	9.0	*S. aureus*	>100	−		Eliminated	Cured	Remarkably useful	−	
77	M 25	Furunculosis	Moderate	Aggravated	CCL	500× 3	6.0	*S. aureus*	12.5	−		Eliminated	Remarkably improved	Remarkably useful	+	
78	M 40	Furunculosis	Moderate	Remarkably aggravated	−	500× 3	19.0	*S. aureus*	1.56	−		Eliminated	Cured	Remarkably useful	−	

Table 4-7 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
79	F 34	Furunculosis	Moderate	Aggravated	—	500× 3	14.0	*S. aureus*	25	—		Eliminated	Moderately improved	Moderately useful	—	
80	M 56	Furunculosis	Severe	Aggravated	—	500× 2	14.5	*S. aureus*	>100	—		Eliminated	Cured	Moderately useful	—	
81	F 24	Furunculosis	Moderate	Aggravated	DOXY	500× 2	7.5					Unknown	Remarkbly improved	Remarkably useful	—	
82	M 53	Furunculosis	Moderate	Aggravated	—	500× 2	6.0	*S. aureus*	1.56	—		Eliminated	Remarkably improved	Remarkably useful	—	
83	F 35	Furunculosis	Moderate	Stationary	—	250× 3	7.0	*S. aureus*	50	—		Eliminated	Cured	Remarkably useful	—	
84	M 43	Furunculosis	Severe	Aggravated	—	500× 2	16.5	*S. aureus*	>100	—		Eliminated	Cured	Remarkably useful	—	
85	F 35	Carbuncle	Severe	Aggravated	—	500× 3	14.0	*S. aureus*	>100	—		Eliminated	Cured	Slightly useful	—	
86	M 68	Carbuncle	Moderate	Stationary	—	500× 2	10.5	*S. intermedius*	0.2	—		Eliminated	Cured	Remarkably useful	—	
87	F 15	Impetigo contagiosa	Moderate	Aggravated	—	250× 3	6.0	CNS	0.39	—		Eliminated	Cured	Remarkably useful	—	
88	F 16	Impetigo contagiosa	Moderate	Aggravated	—	500× 3	14.0	*S. aureus*	0.78	—		Eliminated	Cured	Remarkably useful	—	
89	F 69	Impetigo contagiosa	Mild	Stationary	—	250× 3	3.0	*S. aureus*	3.13	—		Eliminated	Cured	Remarkably useful	—	
90	M 39	Impetiginous eczema	Moderate	Aggravated	—	500× 3	7.0	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	
91	M 40	Impetiginous eczema	Mild	Aggravated	—	500× 3	5.0	*S. aureus*	12.5	*S. aureus*	12.5	Unchanged	Cured	Remarkably useful	—	

Table 4-8 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
92	F 26	Impetiginous eczema	Moderate	Aggravated	—	500× 3	2.7	*S. aureus*	1.56	—		Eliminated	Remarkably improved	Useless	+	
93	F 53	Impetiginous eczema	Moderate	Aggravated	—	250× 3	5.0	CNS	0.78	—		Eliminated	Cured	Moderately useful	—	
94	M 26	Impetiginous eczema	Moderate	Aggravated	—	250× 3	2.0	*S. aureus*	1.56	*S. aureus*	1.56	Unchanged	Cured	Remarkably useful	—	
95	M 22	Impetiginous eczema	Moderate	Aggravated	—	250× 3	14.0					Unknown	Remarkably improved	Moderately useful	—	
96	F 52	Impetiginous eczema	Moderate	Aggravated	—	250× 3	13.0					Unknown	Remarkably improved	Moderately useful	—	
97	M 29	Impetiginous eczema	Moderate	Aggravated	—	500× 2	7.5	*S. aureus* *S. agalactiae*	1.56 0.1	—		Eliminated	Cured	Remarkably useful	—	
98	M 30	Impetiginous eczema	Moderate	Aggravated	—	500× 3	14.0	*S. aureus*	0.78	—		Eliminated	Cured	Slightly useful	+	
99	F 70	Impetiginous eczema	Moderate	Aggravated	—	500× 2	12.5	*S. aureus*	1.56	—		Eliminated	Moderately improved	Moderately useful	—	
100	M 59	Impetiginous eczema	Moderate	Aggravated	—	500× 3	7.0	*S. aureus*	1.56	—		Eliminated	Remarkably improved	Remarkably useful	—	
101	F 32	Impetiginous eczema	Moderate	Aggravated	—	500× 3	12.0	*S. aureus*	1.56	—		Eliminated	Cured	Undesirable	—	GOT↑ GPT↑ Al-P↑
102	F 22	Impetiginous eczema	Moderate	Aggravated	—	500× 3	10.0	*S. aureus*	1.56	—		Eliminated	Remarkably improved	Remarkably useful	—	
103	M 69	Impetiginous eczema	Severe	Aggravated	—	500× 3	10.0	*S. aureus*	1.56	—		Eliminated	Remarkably improved	Remarkably useful	—	WBC↓
104	M 63	Impetiginous eczema	Moderate	Aggravated	—	500× 3	14.0	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	

Table 4-9 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
105	M 79	Impetiginous eczema	Moderate	Aggravated	—	500× 3	12.0					Unknown	Slightly improved	Slightly useful	—	
106	F 19	Impetiginous eczema	Moderate	Aggravated	—	500× 3	14.0	*S. aureus*	0.78	—		Eliminated	Remarkably improved	Remarkably useful	—	GOT↑
107	M 35	Impetiginous eczema	Moderate	Aggravated	CFT	500× 3	7.0	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	
108	F 12	Impetiginous eczema	Moderate	Aggravated	—	500× 3	10.0	*S. aureus* *S. pyogenes*	0.78 0.05	—		Eliminated	Cured	Remarkably useful	—	
109	F 52	Impetiginous eczema	Mild	Stationary	—	250× 3	2.7					Unknown	Moderately improved	Slightly useful	—	
110	F 67	Impetiginous eczema	Moderate	Aggravated	MINO	250× 3	7.7								—	Dropped out
111	F 52	Erysipelas	Mild	Aggravated	—	500× 3	7.0					Unknown	Cured	Remarkably useful	—	
112	M 33	Erysipelas	Moderate	Aggravated	—	250× 3	4.0					Unknown	Cured	Remarkably useful	—	
113	M 45	Erysipelas	Moderate	Aggravated	—	500× 3	14.0	*S. aureus*	1.56			Unknown	Remarkably improved	Moderately useful	—	
114	F 56	Erysipelas	Moderate	Stationary	—	500× 3	13.0					Unknown	Cured	Remarkably useful	—	
115	M 24	Erysipelas	Moderate	Remarkably aggravated	—	500× 3	6.0					Unknown	Cured	Remarkably useful	—	
116	M 56	Phlegmon	Moderate	Aggravated	—	500× 3	7.0					Unknown	Cured	Remarkably useful	—	
117	F 45	Phlegmon	Moderate	Aggravated	PPA	500× 3	7.0					Unknown	Remarkably improved	Moderately useful	—	

Table 4-10 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
118	F 54	Phlegmon	Severe	Aggravated	−	500× 3	14.0	*E. faecalis*	12.5			Unknown	Remarkably improved	Moderately useful	−	
119	M 26	Phlegmon	Moderate	Aggravated	−	500× 3	7.0	*S. aureus*	1.56	−		Eliminated	Cured	Remarkably useful	−	
120	F 48	Phlegmon	Moderate	Aggravated	−	500× 3	7.0	*S. aureus*	1.56	*E. faecium*	>100	Replaced	Cured	Remarkably useful	−	
121	M 26	Phlegmon	Severe	Remarkably aggravated	−	250× 3	4.3	*S. aureus*	0.78	−		Eliminated	Cured	Remarkably useful	−	
122	M 38	Phlegmon	Severe	Aggravated	−	250× 3	2.0					Unknown	Moderately improved	Moderately useful	−	
123	M 29	Phlegmon	Severe	Aggravated	−	250× 3	10.0					Unknown	Cured	Remarkably useful	+	
124	F 14	Phlegmon	Severe	Aggravated	−	250× 3	6.0					Unknown	Cured	Remarkably useful	−	
125	M 37	Phlegmon	Moderate	Aggravated	−	250× 3	12.0					Unknown	Cured	Remarkably useful	−	
126	F 18	Phlegmon	Moderate	Aggravated	−	250× 3	6.3					Unknown	Cured	Remarkably useful	−	Coombs (+)
127	F 29	Phlegmon	Severe	Remarkably aggravated	−	500× 2	14.5					Unknown	Remarkably improved	Remarkably useful	−	
128	M 43	Phlegmon	Moderate	Aggravated	−	500× 3	10.0	*S. pyogenes*	0.1	−		Eliminated	Cured	Remarkably useful	−	
129	M 24	Lymphangitis	Moderate	Remarkably aggravated	−	500× 2	7.0	*E. faecalis*	12.5	−		Eliminated	Cured	Remarkably useful	−	
130	M 30	Lymphangitis	Mild	Remarkably aggravated	−	500× 2	7.0	*E. faecalis*	25	−		Eliminated	Cured	Remarkably useful	−	

Table 4-11 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Oragnisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
131	M 49	Lymphangitis	Moderate	Aggravated	—	250× 3	7.0					Unknown	Cured	Remarkably useful	—	
132	M 44	Lymphangitis	Moderate	Aggravated	—	250× 3	5.0					Unknown	Cured	Remarkably useful	—	
133	F 27	Lymphangitis	Moderate	Aggravated	—	500× 3	14.0					Unknown	Cured	Moderately useful	—	WBC↓
134	M 46	Lymphangitis	Moderate	Stationary	—	500× 3	8.0	*S. pyogenes*	0.05			Unknown	Remarkably improved	Moderately useful	—	
135	F 32	Lymphangitis	Severe	Stationary	—	250× 3	6.3	*S. pyogenes*	0.025			Unknown	Remarkably improved	Moderately useful	—	
136	F 72	Panaritium	Moderate	Aggravated	—	250× 3	4.0	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	
137	F 18	Panaritium	Moderate	Aggravated	—	500× 3	3.0	*S. aureus*	1.56	*S. aureus*	1.56	Unchanged	Moderately improved	Slightly useful	—	
138	M 57	Panaritium	Moderate	Aggravated	—	500× 3	9.0	CNS	25	CNS	25	Unchanged	Moderately improved	Slightly useful	—	
139	M 14	Panaritium	Severe	Aggravated	—	250× 3	12.0	*S. aureus*	1.56	—		Eliminated	Remarkably improved	Moderately useful	+	
140	F 36	Panaritium	Moderate	Stationary	—	250× 3	15.0					Unknown	Cured	Remarkably useful	—	
141	M 67	Panaritium	Severe	Remarkably aggravated	—	500× 2	7.0	*S. aureus*	0.78	—		Eliminated	Cured	Remarkably useful	—	
142	F 47	Panaritium	Mild	Aggravated	—	250× 2	0.7								+	Dropped out
143	F 22	Suppurative paronychia	Moderate	Stationary	MPIPC	250× 3	12.0					Unknown	Remarkably improved	Moderately useful	—	

Table 4-12 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
144	F 34	Suppurative paronychia	Moderate	Aggravated	—	250× 3	7.0	*S. aureus* *S. pyogenes*	1.56 0.1	—		Eliminated	Cured	Remarkably useful	—	
145	M 17	Suppurative paronychia	Moderate	Aggravated	—	250× 3	11.3					Unknown	Cured	Remarkably useful	—	
146	M 29	Suppurative paronychia	Moderate	Aggravated	—	500× 3	14.0	*S. pyogenes*	0.05			Unknown	Remarkably improved	Remarkably useful	—	
147	M 16	Suppurative paronychia	Moderate	Aggravated	—	500× 3	13.0	*S. pyogenes* *S. aureus*	0.1 1.56	—		Eliminated	Remarkably improved	Remarkably useful	—	
148	M 26	Suppurative paronychia	Moderate	Aggravated	NFLX	500× 3	7.7	*S. aureus*	100	—		Eliminated	Cured	Moderately useful	—	
149	F 55	Suppurative paronychia	Moderate	Aggravated	—	250× 3	7.0	*S. aureus* CNS	0.78 0.78			Unknown	Slightly improved	Useless	—	
150	M 36	Suppurative paronychia	Moderate	Aggravated	—	250× 3	3.0					Unknown	Aggraveted	Useless	—	
151	F 53	Suppurative paronychia	Moderate	Aggravated	—	500× 2	2.0	*S. aureus* *E. faecium* *K. oxytoca*	0.78 >100 0.78	—		Eliminated	Cured	Moderately useful	+	
152	F 19	Suppurative paronychia	Moderate	Aggravated	—	250× 3	13.0	*S. aureus*	12.5	—		Eliminated	Cured	Moderately useful	—	
153	F 21	Suppurative paronychia	Moderate	Aggravated	—	250× 3	13.3	*S. aureus*	1.56	*S. aureus*	1.56	Unchanged	Slightly improved	Moderately useful	—	
154	M 38	Suppurative paronychia	Moderate	Tendency to remission	—	500× 2	3.0	*S. aureus*	1.56			Unknown	Remarkably improved	Moderately useful	—	
155	M 17	Suppurative paronychia	Moderate	Aggravated	—	250× 3	12.3	*S. aureus*	>100			Unknown	Slightly improved	Slightly useful	—	
156	M 61	Subcutaneous abscess	Moderate	Aggravated	—	250× 3 500× 3	13.0	*S. aureus*	0.78	—		Eliminated	Remarkably improved	Moderately useful	—	GOT ↑

Table 4-13 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
157	M 22	Subcutaneous abscess	Severe	Aggravated		500× 3	11.7	CNS	0.78	−		Eliminated	Cured	Remarkably useful	−	
158	M 74	Subcutaneous abscess	Severe	Aggravated	CEX	500× 3	16.0	*S. aureus*	3.13	−		Eliminated	Cured	Remarkably useful	−	
159	F 36	Subcutaneous abscess	Moderate	Stationary	−	250× 3	15.0	*S. aureus*	1.56	−		Eliminated	Moderately improved	Moderately useful	−	
160	F 41	Suppurative hidradenitis	Moderate	Aggravated	−	250× 3	5.0					Unknown	Cured	Remarkably useful	−	
161	M 37	Suppurative hidradenitis	Moderate	Aggravated	−	500× 2	14.5	*S. aureus*	0.78	−		Eliminated	Cured	Remarkably useful	−	Eosino↑
162	M 63	Suppurative hidradenitis	Moderate	Aggravated	−	500× 2	12.0	*S. aureus*	>100			Unknown	Remarkably improved	Moderately useful	−	
163	F 30	Suppurative hidradenitis	Moderate	Aggravated	−	250× 3	13.7	*P. acnes*	0.1	−		Eliminated	Moderately improved	Moderately useful	−	
164	M 29	Acne conglobata	Severe	Stationary	MINO	250× 3	13.0	CNS	0.78	−		Eliminated	Remarkably improved	Moderately useful	−	
165	F 23	Acne conglobata	Moderate	Stationary	−	250× 3	14.0					Unknown	Cured	Remarkably useful	−	
166	F 19	Acne conglobata	Moderate	Aggravated	−	250× 3	7.0					Unknown	Moderately improved	Moderately useful	−	
167	M 27	Acne conglobata	Moderate	Aggravated	DOXY	250× 3	44.0					Unknown	Moderately improved	Slightly useful	−	
168	F 35	Infected atheroma	Moderate	Aggravated	−	250× 3	8.0					Unknown	Remarkably improved	Moderately useful	−	
169	M 58	Infected atheroma	Severe	Aggravated	−	250× 3	14.0	*P. acnes*	0.05	−		Eliminated	Cured	Remarkably useful	−	

Table 4-14 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
170	F 21	Infected atheroma	Moderate	Aggravated	—	250× 3	6.0					Unknown	Remarkably improved	Moderately useful	—	
171	M 25	Infected atheroma	Severe	Aggravated	—	250× 3	3.0	*P. asaccharolyticus*	0.2			Unknown	Remarkably improved	Moderately useful	—	
172	F 39	Infected atheroma	Moderate	Tendency to remission	CEX	500× 3	14.0	*Peptostreptococcus*	0.1	—		Eliminated	Remarkably improved	Moderately useful	—	
173	F 21	Infected atheroma	Moderate	Aggravated	—	500× 3	1.0								—	Dropped out
174	M 51	Infected atheroma	Mild	Aggravated	—	500× 3	14.0					Unknown	Cured	Moderately useful	—	
175	F 23	Infected atheroma	Moderate	Aggravated	—	500× 2	7.0					Unknown	Cured	Moderately useful	—	
176	F 26	Infected atheroma	Moderate	Remarkably aggravated	—	500× 3	4.0	CNS	0.78	CNS	0.78	Unchanged	Slightly improved	Useless	+	
177	M 44	Infected atheroma	Severe	Aggravated	—	500× 3	7.0					Unknown	Remarkably improved	Moderately useful	—	
178	M 37	Infected atheroma	Moderate	Remarkably aggravated	—	500× 3	6.7	CNS	0.78	—		Eliminated	Cured	Remarkably useful	—	
179	M 27	Infected atheroma	Moderate	Stationary	—	500× 3	7.0					Unknown	Cured	Remarkably useful	—	
180	M 34	Infected atheroma	Moderate	Aggravated	—	250× 3	11.0	*P. mirabilis*	0.78	—		Eliminated	Cured	Remarkably useful	—	
181	M 32	Infected atheroma	Moderate	Aggravated	—	250× 3	5.3	*Corynebacterium* *S. intermedius*	0.2 0.39	—		Eliminated	Cured	Remarkably useful	—	
182	F 35	Infected atheroma	Severe	Aggravated	—	250× 3	15.0					Unknown	Cured	Remarkably useful	—	

Table 4-15 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
183	M 49	Infected atheroma	Moderate	Aggravated	—	250× 3	9.0					Unknown	Cured	Remarkably useful	—	
184	M 59	Infected atheroma	Moderate	Aggravated	—	500× 3	5.3	CNS	0.78	—		Eliminated	Cured	Remarkably useful	—	
185	M 42	Infected atheroma	Severe	Aggravated	—	250× 3	5.3					Unknown	Cured	Remarkably useful	—	
186	M 63	Infected atheroma	Moderate	Aggravated	—	250× 3	7.0					Unknown	Cured	Remarkably useful	—	
187	M 16	Infected atheroma	Moderate	Stationary	—	250× 3	8.0	CNS	0.39	—		Eliminated	Cured	Remarkably useful	—	
188	M 43	Infected atheroma	Moderate	Aggravated	—	500× 3	4.0	CNS	0.78	—		Eliminated	Moderately improved	Remarkably useful	—	
189	F 21	Infected atheroma	Moderate	Remarkably aggravated	MINO	500× 3	14.0								—	Dropped out
190	F 20	Infected atheroma	Severe	Aggravated	—	500× 3	14.0	CNS	0.78			Unknown	Remarkably improved	Moderately useful	—	
191	M 51	Infected atheroma	Moderate	Aggravated	—	500× 3	14.0	*P. acnes*	0.05	—		Eliminated	Remarkably improved	Moderately useful	—	
192	F 46	Infected atheroma	Moderate	Stationary	—	500× 3	14.0					Unknown	Remarkably improved	Remarkably useful	—	
193	F 26	Infected atheroma	Moderate	Stationary	—	250× 3	13.3	*S. aureus*	0.78	—		Eliminated	Cured	Remarkably useful	—	
194	M 28	Infected atheroma	Moderate	Aggravated	—	500× 3	13.0	CNS	0.78	—		Eliminated	Remarkably improved	Remarkably useful	—	
195	M 51	Infected atheroma	Moderate	Stationary	—	500× 3	8.0	*S. aureus*	0.78	—		Eliminated	Cured	Remarkably useful	—	

Table 4-16 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
196	M 44	Infected atheroma	Moderate	Aggravated	−	500× 3	9.0					Unknown	Cured	Remarkably useful	−	
197	M 20	Infected atheroma	Severe	Aggravated	−	500× 3	9.3	CNS	1.56	−		Eliminated	Remarkably improved	Remarkably useful	−	
198	M 47	Infected atheroma	Moderate	Aggravated	−	500× 3	7.0	CNS	0.78	−		Eliminated	Cured	Remarkably useful	−	
199	F 20	Infected atheroma	Severe	Aggravated	−	500× 3	14.0					Unknown	Cured	Remarkably useful	−	
200	M 22	Infected atheroma	Moderate	Aggravated	−	500× 3	7.0	*E. cloacae*	6.25	−		Eliminated	Cured	Remarkably useful	−	
201	F 37	Infected atheroma	Moderate	Aggravated	−	250× 3	12.0	CNS	0.78	−		Eliminated	Cured	Remarkably useful	−	
202	M 61	Infected atheroma	Moderate	Aggravated	−	500× 2	14.5					Unknown	Remarkably improved	Moderately useful	−	
203	M 30	Infected atheroma	Moderate	Aggravated	−	250× 3	15.7	CNS	0.78	−		Eliminated	Moderately improved	Moderately useful	−	
204	F 54	Infected atheroma	Mild	Stationary	−	500× 2	3.0	CNS	0.78	−		Eliminated	Cured	Remarkably useful	−	
205	M 27	Infected atheroma	Moderate	Aggravated	−	500× 2	8.0	*Micrococcus*	0.2	−		Eliminated	Cured	Remarkably useful	−	
206	M 29	Infected atheroma	Moderate	Aggravated	−	500× 2	14.0	CNS *Coryn.bacterium*	0.78 0.2	−		Eliminated	Slightly improved	Slightly useful	−	
207	M 25	Infected atheroma	Moderate	Aggravated	−	250× 3	12.0					Unknown	Slightly improved	Slightly useful	−	
208	F 56	Infected atheroma	Moderate	Aggravated	−	250× 3	14.3	*P. mirabilis* *P. magnus*	0.39 0.39			Unknown	Moderately improved	Moderately useful	−	

Table 4-17 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
209	F 41	Infected atheroma	Moderate	Aggravated	—	250× 3	0.7								+	Dropped out
210	M 35	Infected atheroma	Moderate	Aggravated	—	500× 2	18.0	CNS *S. salivarius*	0.39 1.56	—		Eliminated	Cured	Remarkably useful	—	
211	M 27	Infected atheroma	Moderate	Aggravated	PAPC	500× 2	9.5	CNS	6.25	—		Eliminated	Remarkably improved	Remarkably useful	—	
212	F 52	Infected atheroma	Moderate	Aggravated	—	500× 2	7.5	CNS	0.78	—		Eliminated	Cured	Remarkably useful	—	
213	F 43	Infected atheroma	Moderate	Stationary	—	500× 2	5.0	*S. aureus*	1.56	—		Eliminated	Cured	Remarkably useful	—	
214	F 36	Infected atheroma	Moderate	Aggravated	—	500× 2	14.0	*Corynebacterium*	0.2			Unknown	Remarkably improved	Remarkably useful	—	
215	M 42	Secondary infection	Moderate	Stationary	GM	250× 3	6.0					Unknown	Remarkably improved	Moderately useful	—	
216	F 24	Secondary infection	Moderate	Stationary	—	500× 3	4.0	*S. aureus*	12.5			Unknown	Moderately improved	Moderately useful	—	
217	F 36	Secondary infection	Moderate	Aggravated	—	250× 3	12.3					Unknown	Cured	Moderately useful	—	
218	M 28	Secondary infection	Moderate	Aggravated	—	500× 3	3.3	*S. aureus*	0.78	—		Eliminated	Cured	Remarkably useful	—	
219	M 48	Secondary infection	Mild	Aggravated	—	500× 3	11.0	*S. aureus*	1.56	—		Eliminated	Slightly improved	Slightly useful	—	
220	M 37	Secondary infection	Moderate	Aggravated	TAPC	500× 2	9.5	*S. aureus* *A. calcoaceticus*	1.56 >100	—		Eliminated	Cured	Remarkably useful	—	GOT ↑ GPT ↑
221	F 46	Secondary infection	Mild	Aggravated	—	250× 3	5.0					Unknown	Cured	Remarkably useful	—	

Table 4-18 Clinical results of CXM-AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM-AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
222	M 47	Secondary infection	Moderate	Stationary	—	500× 2	14.5	CNS *S. intermedius*	0.78 0.2	—		Eliminated	Cured	Remarkably useful	—	
223	F 51	Secondary infection	Moderate	Stationary	—	500× 2	8.5	*S. aureus* CNS	1.56 0.78	—		Eliminated	Cured	Remarkably useful	—	
224	M 29	Secondary infection	Moderate	Stationary	—	500× 2	9.5	*S. agalactiae*	0.39			Unknown	Remarkably improved	Slightly useful	+	
225	F 18	Secondary infection	Moderate	Stationary	—	500× 3	12.0	*S. aureus*	1.56	—		Eliminated	Slightly improved	Slightly useful	—	
226	M 32	Secondary infection	Moderate	Stationary	—	250× 3	8.0	CNS	1.56			Unknown	Slightly improved	Slightly useful	—	
227	F 44	Secondary infection	Moderate	Aggravated	—	250× 3	19.0					Unknown	Remarkably improved	Moderately useful	—	
228	M 24	Secondary infection	Mild	Stationary	—	500× 3	5.0	*M. luteus*	0.05	—		Eliminated	Cured	Remarkably useful	—	
229	M 35	Secondary infection	Moderate	Aggravated	CED	500× 3	13.0	*S. intermedius*	0.1	*E. cloacae*	6.25	Replaced	Remarkably improved	Moderately useful	—	
230	M 48	Secondary infection	Severe	Stationary	—	500× 3	14.0	*Corynebacterium*	0.2	—		Eliminated	Slightly improved	Slightly useful	—	
231	M 53	Secondary infection	Severe	Aggravated	—	500× 3	12.0					Unknown	Cured	Moderately useful	—	GPT↑
232	M 52	Secondary infection	Mild	Tendency to remission	DOXY	250× 3	7.0	*S. aureus*	50	—		Eliminated	Cured	Remarkably useful	—	
233	M 47	Secondary infection	Moderate	Stationary	—	500× 2	5.5	*S. aureus*	1.56	*S. aureus*	1.56	Unchanged	Unchanged	Useless	—	
234	M 52	Secondary infection	Mild	Aggravated	—	500× 3	2.3								—	Dropped out

Table 4 19 Clinical results of CXM AX

No.	Sex Age	Diagnosis	Severity	Status of diseases at the beginning of the treatment	Antibiotics before treatment	CXM AX		Organisms				Bacterio-logical response	GIR	GUR	Side effect	Remarks
						Dose (mg/day)	Duration	Before	MIC	After	MIC					
235	M 20	Secondary infection	Moderate	Aggravated	−	250× 3	3.0					Unknown	Cured	Remarkably useful	−	
236	M 49	Secondary infection	Moderate	Aggravated	−	250× 3	4.0	CNS	0.78	−		Eliminated	Cured	Remarkably useful	−	
237	M 19	Secondary infection	Moderate	Stationary	−	250× 3	5.0								−	Dropped out
238	F 15	Secondary infection	Severe	Aggravated	GRF	250× 3	7.0	*S. aureus*	0.78			Unknown	Moderately improved	Slightly useful	+	
239	M 23	Secondary infection	Moderate	Aggravated	−	500× 3	14.0								−	Dropped out
240	M 27	Secondary infection	Moderate	Aggravated	−	250× 3	7.0	*S. aureus* *S. pyogenes*	1.56 0.05	−		Eliminated	Cured	Remarkably useful	−	
241	F 76	Secondary infection	Severe	Stationary	−	500× 2	16.5	*S. aureus* *S. agalactiae*	0.78 0.1	−		Eliminated	Slightly improved	Slightly useful	−	
242	M 57	Secondary infection	Moderate	Stationary	−	500× 3	15.7	*S. pyogenes*	0.05			Unknown	Moderately improved	Slightly useful	−	
243	M 82	Secondary infection	Severe	Stationary	−	500× 2	14.5	*S. aureus* *K. pneumoniae*	>100 1.56	*K. pneumoniae* *P. aeruginosa*	1.56 >100	Partially eliminated	Unchanged	Useless	−	
244	M 48	Secondary infection	Severe	Aggravated	−	500× 3	11.0	*P. aeruginosa*	>100	*P. aeruginosa*	>100	Unchanged	Moderately improved	Moderately useful	−	
245	M 35	Infected decubitus	Severe	Aggravated	−	500× 3	14.0	CNS	1.56	−		Eliminated	Remarkably improved	Moderately useful	−	

うこととした。

⑦ 細菌学的検査

原則として投与開始日，3日目，7日目の3回起炎菌を検索することとし，その後も可能ならば実施することとした。

各施設で病巣の一部より滅菌綿棒にて採取した検体をケンキポーターに入れ東京総合臨床検査センター研究部（責任者：出口浩一）に送付し，菌の分離，同定および MIC の測定を行った。

4) 効果判定

① 最終全般改善度

投与終了時（治癒の場合はその時点）の全般改善度をもとに最終全般改善度について次の6段階で評価した。

卅：治癒
卅：著しく改善
廾：改善
＋：やや改善
0：不変
×：増悪

② 概括安全度

全投薬期間を通じて副作用及び臨床検査値の異常の有無を勘案し，安全度を次の4段階で評価した。

1：安全
2：ほぼ安全
3：安全性にやや問題あり
4：安全ではない

③ 有用性

最終全般改善度，概括安全度などを勘案して薬剤の治療における有用性を次の5段階で評価した。

1：きわめて有用
2：有用
3：やや有用
4：有用とは思われない
5：好ましくない

④ 細菌学的効果

細菌学的検査結果に基づき，次の5段階で評価した。

1：消失
2：部分消失
3：菌交代
4：不変
5：不明

ただし，投与終了時，細菌学的検討を実施していない症例であっても，次のものは菌陰性化として扱った。

○治癒の症例
○Ⅰ群で膿疱が0になった症例
○Ⅱ，Ⅳ，Ⅴ群で発赤，硬結が残存していても他の症状が0になった症例
○Ⅲ群で水疱，びらんが共に0になった症例
○Ⅵ群で浸出液，膿苔付着が0になった症例
○途中で細菌検査が「陰性」になった症例

III. 臨床成績

1. 患者の背景

性別は男性 134 例（57.3%），女性 100 例（42.7%）と男性がやや多く，年齢は 11～82 歳で 20 代が 69 例（29.5%）と最も多く，次いで 30 代，40 代，50 代の順であった（Table 5）。

2. 投与量および投与期間

1日投与量は 750 mg が 98 例（41.9%）と最も多く，次いで 1,500 mg が 87 例（37.2%）で大部分が 750 mg または 1,500 mg 投与であった（Table 6）。

投与期間は 2～44 日間で 12～16 日間投与が 88 例（37.6%）と最も多く次いで5～8日間投与が 83 例（35.5%）であり，17 日以上の投与はわずか6例であった（Table 6）。

3. 治療開始時病勢および重症度

治療開始時病勢は悪化中が 175 例（74.8%）と最も多く，次いで進行停止が 40 例（17.1%），急激悪化中が 14 例（6.0%）であり自然軽快中がわずか5例（2.1%）であった。

また，群別でも同様の傾向であったがⅥ群は悪化中が 14 例，進行停止が 13 例とほぼ同数であった（Table 7）。

重症度は中等症が 168 例（71.8%）と最も多く，次いで重症が 44 例（18.8%），軽症が 22 例（9.4%）であり，群別でもほぼ同様の傾向であった（Table 8）。

4. 臨床効果

各群の疾患別臨床効果を Table 9 に示した。改善以上の有効率はⅠ群の毛嚢炎 28/30（93.3%），膿疱性痤瘡

Table 5 Sex and age

Age(y) \ Sex	Male	Female	Total (%)
11～15	2	5	7 (3.0)
16～19	8	11	19 (8.1)
20～29	38	31	69 (29.5)
30～39	25	18	43 (18.4)
40～49	26	12	38 (16.2)
50～59	19	16	35 (15.0)
60～69	13	4	17 (7.3)
70～82	3	3	6 (2.6)
Total (%)	134 (57.3)	100 (42.7)	234

Table 6 Daily dose and duration

Daily dose (mg)	Duration (days)					Total (%)
	2~4	5~8	9~11	12~16	17~44	
750	15	40	8	33	2	98 (41.9)
1,000	7	13	6	17	3	46 (19.7)
1,500	7	30	14	35	1	87 (37.2)
Change	0	0	0	3	0	3 (1.3)
Total (%)	29 (12.4)	83 (35.5)	28 (12.0)	88 (37.6)	6 (2.6)	234

Table 7 Status of disease at the beginning of treatment and type of disease

Status of disease \ Type of disease	I	II	III	IV	V	VI	Total (%)
Tendency to remission	1	1	0	1	1	1	5 (2.1)
Stationary	7	3	2	5	10	13	40 (17.1)
Aggravated	33	32	21	32	43	14	175 (74.8)
Remarkably aggravated	2	4	0	6	2	0	14 (6.0)
Total (%)	43 (18.4)	40 (17.1)	23 (9.8)	44 (18.8)	56 (23.9)	28 (12.0)	234

Table 8 Severity and type of disease

Severity \ Type of disease	I	II	III	IV	V	VI	Total (%)
Mild	11	0	3	2	2	4	22 (9.4)
Moderate	27	29	19	33	43	17	168 (71.8)
Sever	5	11	1	9	11	7	44 (18.8)
Total (%)	43 (18.4)	40 (17.1)	23 (9.8)	44 (18.8)	56 (23.9)	28 (12.0)	234

7/13 (53.8%), II群では癤 23/24 (95.8%), 癤腫症 12/14 (85.7%), よう 2/2 (100%), III群では伝染性膿痂疹 3/3 (100%), 膿痂疹性湿疹 19/20 (95.0%), IV群では丹毒 5/5 (100%), 蜂巣炎 13/13 (100%), リンパ管炎 7/7 (100%), 癰疽 6/6 (100%), 化膿性爪囲炎 9/13 (69.2%), V群では皮下膿瘍 4/4 (100%), 化膿性汗腺炎 4/4 (100%), 集簇性痤瘡 4/4 (100%), 感染性粉瘤 41/44 (93.2%), VI群では二次感染 20/27 (74.1%), 感染性褥瘡 1/1 (100%) であり, 膿疱性痤瘡, 化膿性爪囲炎, 二次感染の有効率はやや低かったが他の疾患は 85% 以上の高い有効率が得られた。

1日投与量別臨床効果は Table 10 に示すとおり, 改善以上の有効率は 750 mg 投与が 88/98 (89.8%), 1,000 mg 投与が 38/46 (82.6%), 1,500 mg 投与が 80/87 (92.0%) であり, 1,000 mg 投与でやや低かったが 750 mg および 1,500 mg 投与では 90% 前後の高い有効率が得られた。重症度別臨床効果は, Table 11 に示すとおり, 改善以上の有効率は軽症で 21/22 (95.5%) と最も高く, 中等症および重症はそれぞれ 147/168 (87.5%), 40/44 (90.9%) であった。

治療開始時病勢別臨床効果は Table 12 に示すとおり, 改善以上の有効率は急激悪化中が 13/14 (92.9%) と最も高く, 次いで悪化中が 157/175 (89.7%), 進行停止が 34/40 (85.0%), 自然軽快中が 4/5 (80%) であった。

Table 9 Final global improvement rating classified by diagnosis

Group	Diagnosis	No. of cases	Final global improvement rating						Efficacy rate : ≧ ＋ (%)
			＋＋＋	＋＋	＋	±	0	×	
I	Folliculitis	30	16	7	5	1	1	0	93.3
	Pustular acne	13	1	3	3	5	1	0	53.8
	Sub total	43	17	10	8	6	2	0	81.4
II	Furuncle	24	16	5	2	1	0	0	95.8
	Furunculosis	14	6	4	2	1	1	0	85.7
	Carbuncle	2	2	0	0	0	0	0	100
	Sub total	40	24	9	4	2	1	0	92.5
III	Impetigo contagiosa	3	3	0	0	0	0	0	100
	Impetiginous eczema	20	10	7	2	1	0	0	95.0
	Sub total	23	13	7	2	1	0	0	95.7
IV	Erysipelas	5	4	1	0	0	0	0	100
	Phlegmon	13	9	3	1	0	0	0	100
	Lymphangitis	7	5	2	0	0	0	0	100
	Panaritium	6	3	1	2	0	0	0	100
	Suppurative paronychia	13	5	4	0	3	0	1	69.2
	Sub total	44	26	11	3	3	0	1	90.9
V	Subcutaneous abscess	4	2	1	1	0	0	0	100
	Suppurative hidradenitis	4	2	1	1	0	0	0	100
	Acne conglobata	4	1	1	2	0	0	0	100
	Infected atheroma	44	25	13	3	3	0	0	93.2
	Sub total	56	30	16	7	3	0	0	94.6
VI	Secondary infection	27	12	4	4	5	2	0	74.1
	Infected decubitius	1	0	1	0	0	0	0	100
	Sub total	28	12	5	4	5	2	0	75.0
Total		234	122	58	28	20	5	1	88.9

＋＋＋ : Cured, ＋＋ : Remarkably improved, ＋ : Moderately improved,
± : Slightly improved, 0 : Unchanged, × : Aggravated

Table 10 Final global improvement rating by daily dose and type of disease

Daily dose (mg)	Type of disease						Total (%)
	I	II	III	IV	V	VI	
750	21/24 (87.5)	12/13 (92.3)	7/7 (100)	17/21 (81.0)	22/23 (95.7)	9/10 (90.0)	88/98 (89.8)
1,000	8/11 (72.7)	7/8 (87.5)	2/2 (100)	6/6 (100)	11/12 (91.7)	4/7 (57.1)	38/46 (82.6)
1,500	6/7 (85.7)	17/18 (94.4)	13/14 (92.9)	17/17 (100)	19/20 (95.0)	8/11 (72.7)	80/87 (92.0)
Change	0/1 (0)	1/1 (100)	0	0	1/1 (100)	0	2/3 (66.7)
Total (%)	35/43 (81.4)	37/40 (92.5)	22/23 (95.7)	40/44 (90.9)	53/56 (94.6)	21/28 (75.0)	208/234 (88.9)

Table 11 Final global improvement rating classified by severity

Severity	No. of cases	Final global improvement rating						Efficacy rate : ≧ ＋ (%)
		＋＋＋	＋＋	＋	±	0	×	
Mild	22	17	0	4	1	0	0	95.5
Moderate	168	85	43	19	16	4	1	87.5
Sever	44	20	15	5	3	1	0	90.9
Total	234	122	58	28	20	5	1	88.9

＋＋＋ : Cured, ＋＋ : Remarkably improved, ＋ : Moderately improved,
± : Slightly improved, 0 : Unchanged, × : Aggravated

Table 12 Final global improvement rating classified by status of disease at the beginning of treatment

Status of disease	No. of cases	Final global improvement rating						Efficacy rate : ≧ ＋ (%)
		＋＋＋	＋＋	＋	±	0	×	
Tendency to remission	5	2	2	0	1	0	0	80.0
Stationary	40	20	8	6	4	2	0	85.0
Aggravated	175	91	45	21	14	3	1	89.7
Remarkably aggravated	14	9	3	1	1	0	0	92.9
Total	234	122	58	28	20	5	1	88.9

＋＋＋ : Cured, ＋＋ : Remarkably improved, ＋ : Moderately improved,
± : Slightly improved, 0 : Unchanged, × : Aggravated

4. 評価日別全般改善度

各評価日別全般改善度は Table 13 に示すとおり，改善以上の有効率は3日目 92/149 (61.7%)，7日目 178/225 (79.1%)，10日目 193/231 (83.5%)，14日目 208/234 (88.9%) であった。

疾患群別ではⅡ，Ⅲ，Ⅳ群における7日目の有効率がそれぞれ 82.5%，86.4%，83.7% と高く，これらの疾患では効果の発現が早いように思われた。

5. 自・他覚所見の改善度

各疾患群別の自・他覚所見を投与前と比較して，消失，改善，不変，悪化の4段階で評価し，その改善度を Table 14 に示した。Ⅰ群では丘疹，膿疱は7日目で 83.3%，92.1% と高い改善率を示したが，硬結は7日目で 76.5%，14日目で 82.1% とやや改善が遅かった。

Ⅱ群では自発痛，圧痛，発赤，腫脹，硬結は7日目でそれぞれ 91.9%，92.5%，90.0%，92.5%，82.5% と高い改善率を示し，各所見とも改善が速やかであった。

Ⅲ群では水疱，びらん，発疹新生が7日目で 100%，85.7%，94.7% と高い改善率を示したが，発赤は7日目で 77.3%，10日目で 81.8%，14日目で 87.0% とやや改善が遅かった。

Ⅳ群では自発痛，圧痛，発赤，腫脹，硬結は7日目でそれぞれ 88.6%，90.5%，88.1%，90.7%，89.2% の改善率を示し，各所見とも改善が速やかであった。

Ⅴ群では自発痛，圧痛，発赤，腫脹は7日目でそれぞれ 93.5%，83.3%，85.7%，89.3% と高い改善率を示したが，硬結は7日目で 74.5%，10日目で 81.8%，14日目で 90.9% とやや改善が遅かった。

Ⅵ群では発赤，浸出液が7日目で 80.8%，87.0% と高い改善率を示したが，自発痛，圧痛，腫脹，膿苔付着では14日目でも 78.3%，77.8%，77.8%，78.3% とやや低く，改善が遅かった。

Table 13 Global improvement rating classified by type of disease

Group	Evaluation day	Global improvement rating						Total	Unknown	Efficacy rate : ≧ ＋ (%)
		＋＋＋	＋＋	＋	±	0	×			
I	3rd day	3	3	9	8	3	0	26	17	57.7
	7th day	12	6	10	8	2	0	38	5	73.7
	10th day	13	9	12	7	2	0	43	0	79.1
	14th day	17	10	8	6	2	0	43	0	81.4
II	3rd day	1	3	11	9	3	4	31	9	48.4
	7th day	8	14	11	5	1	1	40	0	82.5
	10th day	16	12	8	3	1	0	40	0	90.0
	14th day	25	9	3	2	1	0	40	0	92.5
III	3rd day	2	3	4	2	1	0	12	11	75.0
	7th day	7	7	5	2	1	0	22	1	86.4
	10th day	8	7	5	2	0	0	22	1	90.9
	14th day	12	7	3	1	0	0	23	0	95.7
IV	3rd day	1	6	11	6	0	1	25	19	72.0
	7th day	17	10	9	4	2	1	43	1	83.7
	10th day	21	8	9	3	1	1	43	1	88.4
	14th day	26	11	3	3	0	1	44	0	90.9
V	3rd day	1	13	10	6	5	4	39	17	61.5
	7th day	13	17	13	9	3	1	56	0	76.8
	10th day	18	19	9	9	0	1	56	0	82.1
	14th day	30	16	7	3	0	0	56	0	94.6
VI	3rd day	3	4	4	5	0	0	16	12	68.8
	7th day	7	6	6	4	3	0	26	2	73.1
	10th day	9	5	5	5	3	0	27	1	70.4
	14th day	12	5	4	5	2	0	28	0	75.0
Total	3rd day	11	32	49	36	12	9	149	85	61.7
	7th day	64	60	54	32	12	3	225	9	79.1
	10th day	85	60	48	29	7	2	231	3	83.5
	14th day	122	58	28	20	5	1	234	0	88.9

＋＋＋ : Cured, ＋＋ : Remarkably improved, ＋ : Moderately improved,
± : Slightly improved, 0 : Unchanged, × : Aggravated

6. 細菌学的効果

原因菌が検出された 169 例についての細菌学的効果を Table 15 に示した。このうち効果判定可能例は 143 例で，その菌消失率は 92.3% (132/143) であった。*S. aureus* の菌消失率は 90.4% (66/73)，*coagulase negative staphylococci* (CNS) は 92.9% (26/28) であり，これらを含めた単独菌感染例では 126 例中 116 例で菌の消失が認められ，その消失率は 92.1% と高かった。また，*S. aureus* を含む複数菌感染は 90.0% (9/10)，CNS を含む複数菌感染は 100% (5/5) であり，これらを含めた複数菌感染の菌消失率は 94.1% (16/17) と高かった。

また，分離頻度の高かった *S. aureus* と CNS について Cefuroxime (CXM)，Cephalexin (CEX) および Cefaclor (CCL) の 10^6 cells/ml 接種菌量の感受性分布を Fig. 2, 3 に示した。

S. aureus に対する CXM の MIC のピークは 1.56 μg/ml にあり，CEX より 1 管程度優れており，CCL とほぼ同等の抗菌力を示した。また，100 μg/ml 以上の高度耐性株も CXM 13 株，CEX 17 株，CCL 23 株であり，CXM が最も少なかった。

CNS に対する CXM の MIC のピークは 0.78 μg/ml にあり，CEX より 1 管程度優れており，CCL とほぼ同等の抗菌力を示した。

7. 安全性の検討

安全性の評価をし得た 245 例についての概括安全度を Table 16 に示す。245 例中「安全」が 208 例 (85.0%)，「ほぼ安全」が 22 例 (9.0%)，「安全性にやや問題あり」が 12 例 (4.9%)，「安全ではない」が 3 例 (0.1

Table 14-1 Efficacy on symptom in each group

Group I

Symptoms	Evaluation day	Efficacy				Total	Unknown	Efficacy rate (%)	
		＋	+	0	×			＋	≧＋
Papule	3rd day	2	16	7	0	25	16	8.0	72.0
	7th day	12	18	6	0	36	5	33.3	83.3
	10th day	17	18	6	0	41	0	41.5	85.4
	14th day	20	17	4	0	41	0	48.8	90.2
Pustule	3rd day	8	14	4	0	26	17	30.8	84.6
	7th day	21	14	3	0	38	5	55.3	92.1
	10th day	25	15	3	0	43	0	58.1	93.0
	14th day	29	11	3	0	43	0	67.4	93.0
Induration	3rd day	2	12	10	0	24	16	8.3	58.3
	7th day	10	16	8	0	34	6	29.4	76.5
	10th day	13	17	9	1	40	0	32.5	75.0
	14th day	16	16	7	0	39	1	41.0	82.1

Group II

Symptoms	Evaluation day	Efficacy				Total	Unknown	Efficacy rate (%)	
		＋	+	0	×			＋	≧＋
Spontaneus pain	3rd day	7	11	8	3	29	8	24.1	62.1
	7th day	24	10	3	0	37	0	64.9	91.9
	10th day	32	3	2	0	37	0	86.5	94.6
	14th day	34	1	2	0	37	0	91.9	94.6
Tenderness	3rd day	7	15	6	3	31	9	22.6	71.0
	7th day	20	17	3	0	40	0	50.0	92.5
	10th day	27	11	2	0	40	0	67.5	95.0
	14th day	35	3	2	0	40	0	87.5	95.0
Redness	3rd day	4	16	8	3	31	9	12.9	64.5
	7th day	11	25	3	1	40	0	27.5	90.0
	10th day	18	20	2	0	40	0	45.0	95.0
	14th day	25	13	2	0	40	0	62.5	95.0
Swelling	3rd day	3	18	7	3	31	9	9.7	67.7
	7th day	15	22	3	0	40	0	37.5	92.5
	10th day	21	18	1	0	40	0	52.5	97.5
	14th day	28	11	1	0	40	0	70.0	97.5
Induration	3rd day	0	17	10	3	30	10	0	56.7
	7th day	11	22	6	1	40	0	27.5	82.5
	10th day	14	21	4	1	40	0	35.0	87.5
	14th day	21	15	3	1	40	0	52.5	90.0

＋ : Resolved, + : Improved, 0 : Unchanged, × : Aggravated

Table 14-2 Efficacy on symptom in each group

Group III

Symptoms	Evaluation day	Efficacy				Total	Unknown	Efficacy rate (%)	
		++	+	0	×			++	≧+
Bulla	3rd day	4	1	1	0	6	4	66.7	83.3
	7th day	10	0	0	0	10	0	100	100
	10th day	10	0	0	0	10	0	100	100
	14th day	10	0	0	0	10	0	100	100
Erosion	3rd day	3	5	3	0	11	11	27.3	72.7
	7th day	14	4	3	0	21	1	66.7	85.7
	10th day	15	5	1	0	21	1	71.4	95.2
	14th day	20	2	0	0	22	0	90.9	100
Redness	3rd day	2	6	4	0	12	11	16.7	66.7
	7th day	7	10	5	0	22	1	31.8	77.3
	10th day	8	10	4	0	22	1	36.4	81.8
	14th day	11	9	3	0	23	0	47.8	87.0
New eruption	3rd day	6	4	0	0	10	10	60.0	100
	7th day	16	2	1	0	19	1	84.2	94.7
	10th day	16	2	1	0	19	1	84.2	94.7
	14th day	18	1	1	0	20	0	90.0	95.0

Group IV

Symptoms	Evaluation day	Efficacy				Total	Unknown	Efficacy rate (%)	
		++	+	0	×			++	≧+
Spontaneous pain	3rd day	8	10	0	1	19	17	42.1	94.7
	7th day	25	6	2	2	35	1	71.4	88.6
	10th day	26	5	2	2	35	1	74.3	88.6
	14th day	30	2	2	2	36	0	83.3	88.9
Tenderness	3rd day	6	15	2	1	24	19	25.0	87.5
	7th day	21	17	3	1	42	1	50.0	90.5
	10th day	25	14	2	1	42	1	59.5	92.9
	14th day	33	8	1	1	43	0	76.7	95.3
Redness	3rd day	2	21	1	1	25	18	8.0	92.0
	7th day	19	18	4	1	42	1	45.2	88.1
	10th day	23	15	3	1	42	1	54.8	90.5
	14th day	26	15	1	1	43	0	60.5	95.3
Swelling	3rd day	5	19	0	1	25	19	20.0	96.0
	7th day	22	17	3	1	43	1	51.2	90.7
	10th day	25	15	2	1	43	1	58.1	93.0
	14th day	33	8	2	1	44	0	75.0	93.2
Induration	3rd day	9	8	2	0	19	20	47.4	89.5
	7th day	23	10	3	1	37	2	62.2	89.2
	10th day	25	8	3	1	37	2	67.6	89.2
	14th day	32	4	1	0	37	2	86.5	97.3

++ : Resolved, + : Improved, 0 : Unchanged, × : Aggravated

Table 14-3 Efficacy on symptom in each group

Group V

Symptoms	Evaluation day	Efficacy				Total	Unknown	Efficacy rate (%)	
		±	+	0	×			±	≧+
Spontaneous pain	3rd day	19	8	4	3	34	12	55.9	79.4
	7th day	35	8	1	2	46	0	76.1	93.5
	10th day	38	6	1	1	46	0	82.6	95.7
	14th day	44	2	0	0	46	0	95.7	100
Tenderness	3rd day	10	18	8	2	38	16	26.3	73.7
	7th day	24	21	8	1	54	0	44.4	83.3
	10th day	34	16	3	1	54	0	63.0	92.6
	14th day	44	8	2	0	54	0	81.5	96.3
Redness	3rd day	2	26	9	2	39	17	5.1	71.8
	7th day	15	33	7	1	56	0	26.8	85.7
	10th day	23	28	5	0	56	0	41.1	91.1
	14th day	34	19	3	0	56	0	60.7	94.6
Swelling	3rd day	5	23	9	2	39	17	12.8	71.8
	7th day	20	30	5	1	56	0	35.7	89.3
	10th day	29	24	2	1	56	0	51.8	94.6
	14th day	41	14	1	0	56	0	73.2	98.2
Induration	3rd day	0	24	13	1	38	17	0	63.2
	7th day	9	32	13	1	55	0	16.4	74.5
	10th day	15	30	10	0	55	0	27.3	81.8
	14th day	26	24	5	0	55	0	47.3	90.9

Group VI

Symptoms	Evaluation day	Efficacy				Total	Unknown	Efficacy rate (%)	
		±	+	0	×			±	≧+
Spontaneous pain	3rd day	7	3	2	0	12	11	58.3	83.3
	7th day	10	6	5	0	21	2	47.6	76.2
	10th day	12	4	6	0	22	1	54.5	72.7
	14th day	17	1	5	0	23	0	73.9	78.3
Tenderness	3th day	7	5	3	0	15	12	46.7	80.0
	7th day	10	9	6	0	25	2	40.0	76.0
	10th day	13	6	7	0	26	1	50.0	73.1
	14th day	16	5	6	0	27	0	59.3	77.8
Redness	3th day	5	8	3	0	16	12	31.3	81.3
	7th day	6	15	5	0	26	2	23.1	80.8
	10th day	7	14	6	0	27	1	25.9	77.8
	14th day	11	12	5	0	28	0	39.3	82.1
Swelling	3rd day	6	5	4	0	15	12	40.0	73.3
	7th day	10	8	6	1	25	2	40.0	72.0
	10th day	12	7	6	1	26	1	46.2	73.1
	14th day	17	4	5	1	27	0	63.0	77.8
Pseudmembrane	3rd day	7	3	3	0	13	10	53.8	76.9
	7th day	10	4	7	0	21	2	47.6	66.7
	10th day	10	5	7	0	22	1	45.5	68.2
	14th day	13	5	5	0	23	0	56.5	78.3
Oozing	3rd day	7	6	2	0	15	10	46.7	86.7
	7th day	11	9	3	0	23	2	47.8	87.0
	10th day	12	9	3	0	24	1	50.0	87.5
	14th day	16	7	2	0	25	0	64.0	92.0

± : Resolved, + : Improved, 0 : Unchanged, × : Aggravated

Table 15 Bacteriological response classified by isolated organisms

	Isolated organism	No. of cases	Bacteriological response					Elimination rate** (%)
			Eliminated	Partially eliminated	Replaced	Unchanged	Unknown	
Monomicrobial infection	*S. aureus*	85	65		1	7	12	90.4
	CNS*	32	26			2	4	92.9
	M. roseus	2	2					100
	M. luteus	1	1					100
	Micrococcus sp.	1	1					100
	S. pyogenes	5	1				4	100
	S. agalactiae	1					1	−
	E. faecalis	3	2				1	100
	Corynebacterium sp.	4	3				1	100
	E. cloacae	1	1					100
	P. mirabilis	1	1					100
	P. aeruginosa	1				1		0
	P. asaccharolyticus	1					1	−
	Peptostreptococcus sp.	1	1					100
	S. constellatus	1	1					100
	S. intermedius	2	1		1			100
	P. acnes	8	8					100
	Sub total	150	114	0	2	10	24	92.1
Polymicrobial infection	*S. aureus* + others	11	9	1			1	90.0
	CNS + others	5	5					100
	Others	3	2				1	100
	Sub total	19	16	1	0	0	2	94.1
Unknown		65					65	−
Total		234	130	1	2	10	91	92.3

* CNS : *coagulase negative staphylococci*

** Elimination rate (%) $= \frac{\text{Eliminated} + \text{Replaced}}{\text{Eliminated} + \text{Partially eliminated} + \text{Replaced} + \text{Unchanged}} \times 100$

Table 16 Overall safety rating classified by type of disease

Group	No. of cases	Overall safety rating				Safety rate : ≧0 (%)
		+	0	×	××	
I	46	36	7	3	0	93.5
II	40	36	2	2	0	95.0
III	24	20	1	1	2	87.5
IV	45	39	3	2	1	93.3
V	59	55	2	2	0	96.6
VI	31	22	7	2	0	93.5
Total (%)	245	208 (85.0)	22 (9.0)	12 (4.9)	3 (0.1)	93.9

+ : Safe, 0 : Nearly safe,
× : Slightly problem with safety,
×× : Not safe

%）であり，「ほぼ安全」以上は 93.9% であった。

副作用は Table 17 に示すとおり，245 例中 17 例（6.9%）に発現し，うち7例が投与を中止した。副作用の種類は下痢，軟便などの消化器症状が 13 例（5.3%）と多く，その他めまい・下腹部痛，舌尖のしびれ，口腔内乾燥，動悸・悪心が各1例計4例（1.6%）であった。

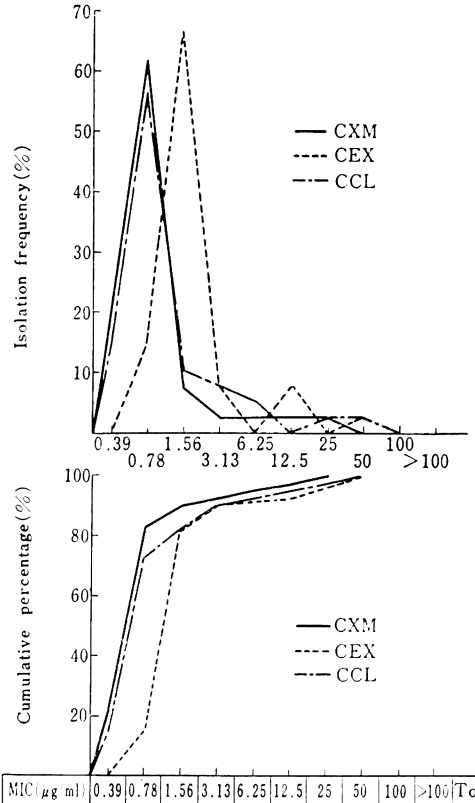
それらの副作用症例一覧を Table 18 に示した。

臨床検査値異常は Table 19 に示すとおり，WBC の減少2例（1.4%），好酸球増多1例（0.7%），GOT 上昇2例（1.4%），GPT 上昇2例（1.4%），GOT·GPT 上昇2例（1.4%），GOT·GPT·Al-p 上昇1例（0.7%），クームス（直接）陽性1例（5.6%）の計 11 例にみられた。

8. 有用性の検討

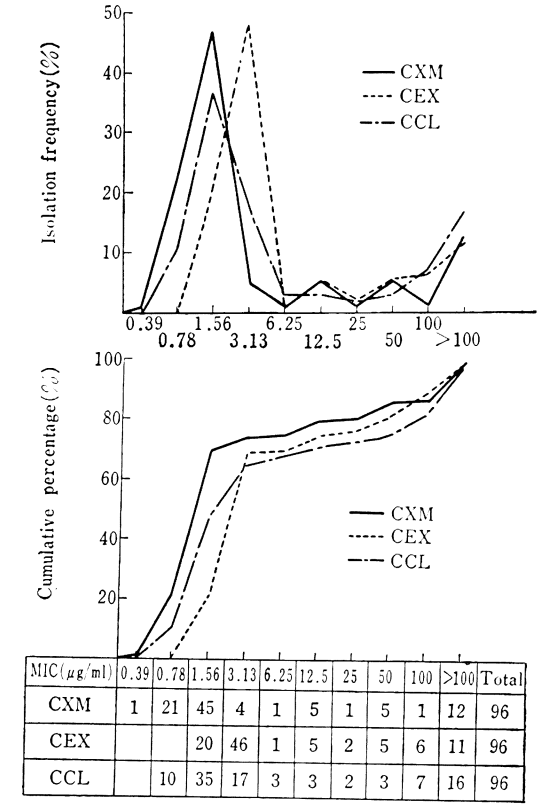
有用性の評価をし得た 234 例についての有用性を Table 20 に示した。234 例中「きわめて有用」が 125

Fig. 2 Sensitivity distribution of clinical isolates *S. aureus* (10^6 cells/ml)



MIC (μg ml)	0.39	0.78	1.56	3.13	6.25	12.5	25	50	100	>100	Total
CXM	8	24	3	1	1	1	1				39
CEX		6	26	3		3		1			39
CCL	6	22	4	3	2		1	1			39

Fig. 3 Sensitivity distribution of clinical isolates CNS (10^6 cells/ml)



MIC (μg/ml)	0.39	0.78	1.56	3.13	6.25	12.5	25	50	100	>100	Total
CXM	1	21	45	4	1	5	1	5	1	12	96
CEX			20	46	1	5	2	5	6	11	96
CCL		10	35	17	3	3	2	3	7	16	96

Table 17 Side effects

	Symptoms	Relation to the drug			Total (% : Frequency)
		Probable	Possible	Unknown	
Gastrointestinal tract symptoms	Diarrhea	2			2 (0.8)
	Loose stool	3			3 (1.2)
	Diarrhea Loose stool	1			1 (0.4)
	Constipation			1	1 (0.4)
	Gastric pain		1		1 (0.4)
	Gastic pain · Constipation	1			1 (0.4)
	Gastric pain · Nausea	1			1 (0.4)
	Nausea · Vomiting		1		1 (0.4)
	Nausea · Loose stool		1		1 (0.4)
	Gastric discomfort	1			1 (0.4)
	Sub total	9	3	1	13 (5.3)
Other symptoms	Dizzines · Lower abdominal pain	1			1 (0.4)
	Numbness of tongue		1		1 (0.4)
	Mouth dry		1		1 (0.4)
	Palpitation · Nausea	1			1 (0.4)
	Sub total	2	2		4 (1.6)
Total		11	5	1	17 (6.9)

(No. of cases side effect evaluated : 245)

Table 18-1 Side effects

No.	Sex Age (yrs)	Diagnosis (Underlying disease) (Complication)	Daily dose (mg)	Duration (days)	Symptom	Severity	Date of onset	Relation to the drug	Treatment and course	
238	F 15	Secondary infection (+) (−)	750	7.0	Diarrhea	++	5	Probable	Withdrawn	Disappeared on the day after discontinuation of administration
176	F 26	Infected atheroma (−) (−)	1,500	4.0	Diarrhea・Loose stool	+	2	Probable	Withdrawn	Disappeared on the day after discontinuation of administration
139	M 14	Panaritium (−) (−)	750	12.0	Diarrhea	+	3	Probable	Continued	Disappeared 3 days after start of treatment with anti-ulcer drug
77	M 25	Furunculosis (−) (+)	1,500	6.0	Loose stool	+	2	Probable	Continued	Disappeared on the day of completion of administration
98	M 30	Impetiginous eczema (+) (−)	1,500	14.0	Loose stool	+	2	Probable	Continued	Disappeared on the day of completion of administration
64	F 28	Furuncle (−) (−)	1,500	7.0	Loose stool	+	7	Probable	Continued	Disappeared on the day after completion of administration
35	F 21	Pustular acne (−) (−)	750	15.0	Constipation	+	2	Unknown	Continued	Disappeared 3 days after occurrence of symptom
59	F 51	Furuncle (−) (−)	750	6.0	Gastric pain	+	6	Possible	Continued	Disappeared 4 days after start of treatment with anti-ulcer drug
142	F 47	Panaritium (−) (−)	500	0.7	Gastric pain Nausea	++ ++	1 1	Probable Probable	Withdrawn Withdrawn	
224	M 29	Secondary infection (+) (−)	1,000	9.5	Gastric pain Constipation	++ ++	2 2	Probable Probable	Withdrawn Withdrawn	Disappeared on the day of discontinuation of administration
18	M 33	Folliculitis (+) (−)	1,500 1,000	13.7	Gastric discomfort	+	9	Probable	Continued	Disappeared on the day of completion of administration

Table 18-2 Side effects

No.	Sex Age (yrs)	Diagnosis (Underlying disease) (Complication)	Daily dose (mg)	Duration (days)	Symptom	Severity	Date of onset	Relation to the drug	Treatment and course	
151	F 53	Suppurative paronychia (−) (+)	1,000	2.0	Nausea Loose stool	+ +	3 3	Possible Possible	Continued Continued	Disappeared on the day of completion of administration
39	F 26	Pustular acne (−) (−)	750	7.0	Vomiting Nausea	++ ++	8 8	Possible Possible	Withdrawn Withdrawn	Remission after discontinuation of administration
68	M 56	Furuncle (−) (+)	1,000	2.5	Mouth dry	+	2	Possible	Continued	
123	M 29	Phlegmon (−) (−)	750	10.0	Numbness of tongue	+	5	Possible	Continued	Disappeared 4 days after occurrence of symptom
92	F 26	Impetiginous eczema (−) (−)	1,500	2.7	Dizziness Lower abdominal pain	+ ++	1 3	Probable Probable	Withdrawn Withdrawn	Disappeared 2 days after discontinuation of administration Disappeared 2 days after start of treatment with anti-ulcer drug and stomachic
209	F 41	Infected atheroma (−) (−)	750	0.7	Palpitation Nausea	± +	1 1	Probable Probable	Withdrawn Withdrawn	Disappeared 2 days after discontinuation of administration

Table 19 Laboratory findings

Item	No. of examined case	Relation to the drug			Total (%: Frequency)
		Probable	Possible	Unknown	
WBC↓	140		2		2 (1.4)
Eosino.↑	136			1	1 (0.7)
GOT↑	141		1	1	2 (1.4)
GPT↑	141		2		2 (1.4)
GOT·GPT↑	141		1	1	2 (1.4)
GOT·GPT·Al-P↑	129	1			1 (0.8)
Coombs test (+)	18		1		1 (5.6)
Total		1	7	3	11 (4.5)

(No. of cases side effect evaluated: 245)

Table 20 Global utility rating classified by type of disease

Group	No. of cases	Global utility rating					Utility rate: ≧+ (%)
		##	#	+	0	×	
I	43	17	14	10	2	0	72.1
II	40	25	11	3	1	0	90.9
III	23	14	4	3	1	1	78.3
IV	44	25	14	3	2	0	88.6
V	56	34	18	3	1	0	92.9
VI	28	10	8	8	2	0	64.3
Total (%)	234	125 (53.4)	69 (29.5)	30 (12.8)	9 (3.8)	1 (0.4)	82.9

##: Remarkably useful #: Useful +: Slightly useful
0: Useless ×: Undesirable

例 (53.4%), 「有用」が 69 例 (29.5%), 「やや有用」が 30 例 (12.8%), 「有用とは思われない」が9例 (3.8%), 「好ましくない」が1例 (0.4%) であり, 有用以上の有用率は 82.9% であった。

IV. 考 察

皮膚科領域における主な細菌感染症の起炎菌は黄色ブドウ球菌であるが, 全身状態までも侵すことが少ないため, 経口的投与剤が望ましい。すでに皮膚より分離された黄色ブドウ球菌は耐性を有する傾向が目立ち, 長年この領域で主として使用された CEX も, もはや 40% を超える耐性菌の存在が報告されるに至った[3]。今回第2世代セフェム系抗生物質である CXM の 1-acetoxyethyl ester 誘導体である Cefuroxime axetil (CXM-AX, SN 407) の皮膚組織内濃度測定および臨床効果の検討を行う機会を得た。CXM の抗菌スペクトルは本剤が β-lactamase に安定であるので, 一部の皮膚潰瘍をはじめとする皮膚感染症にも効果が期待出来ると同時に, 主な起炎菌である黄色ブドウ球菌にも第1世代のセフェム剤に劣らない抗菌力を示している。

皮膚組織への移行: 250 mg 1 回経口投与後, 120 分の血清濃度は良く揃っており, 従来の測定値にほぼ一致した値を示している[2]。

一方, 皮膚組織への移行は血清中濃度の 200% を超す値から極めて小さい値までばらついているが, これは皮膚からの抽出手技が難しく, 他臓器よりも粉砕し難いなどの困難があるための実験誤差も伴っているためと解して良いであろう。この傾向は 500 mg 1 回投与においても窺われる。しかし, 概括的に見て約半量前後の値が血清中濃度に対して皮膚移行値として認められ, 黄色ブドウ球菌に対する本剤の MIC 値を上回ることが多くの場合において達成されうるものと見てよいであろう。250 mg, 500 mg 投与例を合わせて 57 例の多数例について測定されたことは評価に値すると考える。

臨床試験: 12 施設において 234 例について検討された。

投与量は1日量 750 mg (41.9%) と 1,500 mg (37.2

%) が多く，1,000 mg はむしろ 19.7% と少数例であった。

治療開始時における疾患の進行の状況は表在性化膿性疾患のような自然治癒傾向を示す疾患群では薬物の効果を知るためには重要な要因となるが，今回扱った症例の 74.8% は病勢進行中のものであった。そして，結果的には重症で，進行中の症例ほどよい臨床効果を得ているが (Table 11, 12)，これは全身状態を侵されないこの種の疾患においては病気が重いことと治り難いこととはむしろ逆比例的関係にあって，炎症が強いほど生体の防御反応も強く，従って治療効果も上がることは，従来多くの他剤の治験において経験して来た事実である[4~6]。

治療効果は判定日別の値が Table 13 に見られる通り，毛嚢炎・膿疱性痤瘡などのⅠ群と潰瘍の二次感染などのⅥ群において劣るのは，従来の他剤と変わらない。伝染性膿痂疹を含むⅢ群と蜂巣炎・丹毒などの薬剤が病巣に到達し易い病理学的構造を有するⅣ群では効果が良いばかりでなく，7日後の判定日において早くも高率の改善が見られ，つまり「切れ味」が良いことを示しているが，Ⅰ群は皮脂の分泌や，起炎菌が *Propionibacterium acnes*, CNS をはじめ，*Pityrosporum* などのイースト類まで関与していることもあって，有効率も，「切れ味」も良くないのも他剤と同じ態度である。嚢腫壁を通過して薬剤が奏効することを必要とするⅤ群も，そのために「切れ味」は悪いが最終的な効果は充分に得られている。中でも浅在性化膿性疾患の代表とも言うべき癰・ようを含むⅡ群の有効率は薬剤の効果を判定するのに最も大切であるが，本剤は「切れ味」，有効率共に良い値を示した。群別に検討すると (Table 14)，Ⅰ群とⅡ群の硬結は疾患治癒後も遺残する症状なので，他の症状より遅れて改善しても構わないと考えられ，むしろ，Ⅱ群の自発痛と腫脹の速やかな改善は本剤の有効性を示すものと考える。Ⅲ群では治癒への経過として水疱消失→びらんの乾燥→発赤の消褪の順をたどるものであるが，発赤の消褪の項目の数値が低いのは，症例が成人に限られて，膿痂疹性湿疹をも包括するためと考える。通常，最も有効な薬剤の場合には発赤の消褪まで7日前後で到達しうる。Ⅵ群は原疾患である潰瘍が治癒しない限り，感染を治癒せしめても疾患の治癒に至るものではないが，このような症例が浅在性化膿性疾患の領域では多いので，一応の効果を検討して置く必要があると考えられ，本剤の効果はその面では充分であった。

細菌学的効果：皮膚と言う外界から汚染され易い部位で，しかも nasal carrier, genital carrier など，たとえ原疾患が治癒しても全皮膚面から起炎菌が消失し難いなどの理由から，効果判定の④細菌学的効果に示した菌陰性化の暫定的取り決めに従って判定を行った。しかし，Fig. 2 に示すように黄色ブドウ球菌に関しては従来繁用されていた CEX よりも感受性の分布が良いので，細菌学的効果も良いものと考えられる。ことに CNS に対しては感受性の分布は CEX より良い結果を得た。

副作用：6.9% に認められたが，その多くが胃腸障害であり，本系統の薬剤に最近増加したアレルギー性の発疹は1例も認められなかった。

臨床検査値異常：前項同様セフェム系薬剤に最近増加したアレルギー性薬物性肝炎によると考えられるトランスアミナーゼの増加は少数に認められ，また好酸球の増多も疑われるもの1例 (0.7%) にとどまった。

以上新たにセフェム系抗生物質の経口剤を開発するに当たって，その皮膚科領域における有効性と安全性を人を対象として検討したが，得られたデータから判断して，疾患の群別有効性から考えても，今回の治験のデータは他剤における一般的傾向を逸脱しなかったし，副作用の面からも特に危険と考えられる結果はなく，今回の治験が偏らないデータである可能性を示唆した。

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STUDIES ON CEFUROXIME AXETIL (CXM-AX)-ITS SKIN TISSUE LEVELS AND CLINICAL EFFICACY

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The fundamental and clinical studies were performed on Cefuroxime axetil (CXM-AX, SN 407), a new oral cephalosporin, prodrug of Cefuroxime (CXM). The results are summarised below.

1. The mean serum levels of CXM at 120-150 minutes after oral administration of 250 mg and 500 mg of CXM-AX were 3.25 μg/ml and 4.30 μg/ml, and the corresponding mean skin tissue levels were

1.46 μg/g and 2.14 μg/g, respectively. The rates of transfer of CXM into skin tissues were 44.9% and 59.5%, respectively, showing dose response between 250 mg and 500 mg groups.

2. Out of 234 cases assessable for clinical efficacy, 122 cases were assessed as Cured, 58 Remarkably Improved, 28 Moderately Improved, 20 Slightly Improved, 5 Unchanged and 1 Aggravated, with the efficacy rate ("Moderately Improved" or better) being 88.9%. When the clinical efficacy was compared among groups of different diagnosis, the efficacy rates were 81.4% (35/43) in the Group I, 92.5% (37/40) in the Group II, 95.7% (22/23) in the Group III, 90.9% (40/44) in the Group IV, 94.6% (53/56) in the Group V and 75.0% (21/28) in the Group VI.

3. Concerning the bacteriological response of the causative organisms, isolated from 169 patients, the bacterial elimination rate was 92.3% (132/143).

The MIC peaks of CXM, against 96 strains of *S. aureus* and 39 strains of *coagulase negative staphylococci* (CNS), both of which were the major clinical isolates, were 1.56 μg/ml and 0.78 μg/ml, respectively. The antibacterial activity of CXM was higher than that of Cephalexin (CEX) and comparable to that of Cefaclor (CCL).

4. Among 245 cases in which the safety of the drug was evaluated, adverse events were observed in 17 cases (6.9%), most of them being gastrointestinal tract symptoms, e.g. diarrhoea, loose stool and gastric pain. The abnormal laboratory findings were noted in a total of 11 cases, i.e. decrease in WBC counts in 2 cases (1.4%), increase in eosinophil counts in 1 (0.7%), elevation of hepatic transaminase levels in 7 (5.0%) and positive reaction in direct Coombs' test in 1 (5.6%).