

RESULTS

concentration of salicylic acid, ($P > 0.05$), and there's significant decrease in 5mM and 10 mM of salicylic acid ($P < 0.01$) (Table 2).

The mean and S.D. of the absorbance of the significant slime producers (Absorbance of the slime layer was more than 0.300) were calculated. The mean of absorbance for negative control was 0.675, for organisms incubated in 1 mM salicylic acid was 0.430, for organisms incubated in 5mM salicylic acid was 0.197, and for organisms incubated in 10mM salicylic acid was 0.130. There was statistically significant decrease in 1mM of salicylic acid, ($P < 0.05$), and highly significant decrease in 5mM and 10mM salicylic acid ($P < 0.01$) (Table 3).

Study of the adherence of *S.epidermidis* to catheter segments was done by putting catheter segments in cultures of *S.epidermidis* containing different NSAIDs, and counting the adherent organisms and comparing the effect of the examined drugs to a negative control.

The log mean and S.D. of the colony count were calculated for all *S.epidermidis* isolates. The log mean of the negative control was 1.397, with addition of 10mM salicylic acid was 0.668, with addition of 10mM acetyl salicylic acid was 0.981, with 10 mM

was 1.042, with catheters treated with salicylic acid was 0.430, with catheters treated with acetyl salicylic acid was 0.495 and with catheters treated with diclofenac was 0.337. These results showed highly significant decrease of colony count after incorporation of catheters with all NSAIDs used ($P < 0.01$) (Table 6).

The log mean and S.D. of the colony count were calculated for the significant *S.epidermidis* isolates. The log mean of the negative control was 1.398, with catheters treated with salicylic acid was 0.561, with catheters treated with acetyl salicylic acid was 0.670, and with catheters treated with diclofenac was 0.524. The results showed highly significant decrease of colony count after incorporation of catheters with all NSAIDs used ($P < 0.01$) (Table 7).

No.	Age	Sex	Duration of fixation (days)	Cause of fixation	Department	Spectrophotometry Absorbance				Adherence of bacteria to catheter segments						Incorporation of NSAIDs into Catheter			
						A	B	C	D	A	B	C	D	E	F	A	B	C	D
1	53		2.0	Nephrectomy	Urol.	0.822	0.755	0.333	0.166	125	72	98	12	35	19	44	25	21	5
2	44		1.5	Splenectomy	Surg.	0.471	0.788	0.354	0.169	64	23	59	42	60	35	15	12	13	0
3	63		3	T.U.R	Urol.	0.260	0.177	0.059	0.047	37	2	10	21	16	19	9	0	15	0
4	47		2.0	Stone Uret.	Urol.	0.385	0.431	0.129	0.102	197	0	63	122	29	106	80	12	6	35
5	49		1.5	Acute retention	Urol.	0.447	0.346	0.164	0.187	77	7	0	0	3	0	22	0	0	0
6	37		1.5	diabetic ketoacidosis	Int. Care	0.368	0.320	0.206	0.122	38	0	12	31	2	16	28	7	18	0
7	48		2.0	stone ureter	Urol.	0.511	0.235	0.136	0.138	95	1	23	9	2	39	12	0	0	0
8	27		4.5	Exploration	Surg.	0.302	0.299	0.295	0.184	62	55	43	20	23	60	5	0	0	0
9	58		2.5	Nephrectomy	Urol.	1.149	0.333	0.177	0.112	142	13	5	100	62	46	85	15	34	23
10	33		2.0	Stone bladder	Urol.	0.366	0.537	0.235	0.132	74	14	23	18	16	33	5	3	0	7

No.	Age	Sex	Duration of fixation (days)	Cause of fixation	Department	Spectrophotometry Absorbance				Adherence of bacteria to catheter segments						Incorporation of NSAIDs into Catheter			
						A	B	C	D	A	B	C	D	E	F	A	B	C	D
11	39		1.5	Stone bladder	Urol.	0.190	0.171	0.174	0.146	4	0	0	3	1	0	0	0	0	0
12	55		3.5	Resection anastomosis	Surg.	0.306	0.209	0.161	0.106	15	0	0	0	0	4	3	2	3	0
13	28		2.0	Exploration	Surg.	0.745	0.145	0.120	0.088	97	15	100	62	53	19	47	0	15	3
14	62		2.5	Cerebrovas. stroke	Neuro med..	0.162	0.167	0.168	0.152	3	2	7	0	1	0	0	0	0	0
15	53		1.5	Retention	Urol.	0.529	0.319	0.175	0.115	105	3	45	7	68	92	83	47	76	25
16	69		4.0	T.U.R	Urol.	0.371	0.236	0.153	0.089	62	51	67	23	18	45	24	13	20	11
17	40		2.0	Peritonitis	Surg.	0.468	0.407	0.133	0.063	80	0	6	9	18	0	95	14	39	58
18	64		2.5	Cancer bladder	Urol.	0.171	0.250	0.112	0.093	0	3	0	0	2	0	2	0	1	0
19	51		2.0	Stone bladder	Urol.	0.487	0.242	0.113	0.190	62	33	67	12	28	18	25	17	12	2
20	65		2.0	Cerebral Hge.	Int. Care.	0.282	0.242	0.096	0.103	16	4	10	22	3	9	0	0	0	0

No.	Age	Sex	Duration of fixation (days)	Cause of fixation	Department	Sperctrophotometry Absorbance				Adherence of bacteria to catheter segments						Incorporation of NSAIDs into Catheter			
						A	B	C	D	A	B	C	D	E	F	A	B	C	D
21	68		2.0	T.U.R	Urol.	0.117	0.081	0.080	0.082	8	113	17	0	2	14	3	7	0	0
22	64		6.0	Cerebrovas. stroke	Neuro Med.	0.245	0.135	0.092	0.937	55	0	3	7	27	44	17	0	3	0
23	52		1.5	Bladder neck obstruction	Urol.	0.121	0.074	0.069	0.080	0	1	0	0	1	0	0	0	0	0
24	60		3.5	Right hemicolectomy	Surg.	0.149	0.209	0.220	0.261	13	2	0	0	7	0	0	0	0	00
25	63		2.0	T.U.R	Urol.	2.14	0.640	0.473	0.159	124	14	90	35	93	102	37	16	6	8
26	66		2.0	Open (Abd) Prostatectomy	Urol.	1.321	1.408	0.183	0.154	87	0	45	12	18	69	41	0	0	0
27	68		2.5	T.U.R	Urol.	1.230	1.243	0.327	0.104	115	23	125	5	63	95	24	13	2	6
28	47		1.5	Stone Kidney	Urol.	0.385	0.345	0.100	0.108	7	0	0	3	0	0	10	0	0	0
29	58		2.5	Stone Ureter	Surg.	0.727	0.246	0.122	0.095	37	12	22	1	19	5	23	0	16	4
30	24		4.5	Encephalitis	Neuro Med.	0.756	0.698	0.226	0.208	17	0	8	12	3	6	28	3	1	0

No.	Age	Sex	Duration of fixation (days)	Cause of fixation	Department	Sperctrophotometry Absorbance				Adherence of bacteria to catheter segments						Incorporation of NSAIDs into Catheter			
						A	B	C	D	A	B	C	D	E	F	A	B	C	D
31	33		1.5	Retention	Urol.	0.554	0.073	0.066	0.089	85	53	47	60	72	34	35	0	0	0
32	45		2.5	Brain abscess	Neuro. Surg.	0.505	0.238	0.156	0.144	54	0	6	1	13	21	17	0	5	0
33	61		2.5	Stone ureter	Urol.	0.263	0.108	0.087	0.098	67	25	43	40	26	66	23	0	0	0
34	63		1.5	T.U.R	Urol.	0.252	0.969	0.211	0.195	5	5	0	4	2	0	3	0	4	0
35	52		2.5	Diabetic ketoacidosis	Int care	0.723	0.284	0.161	0.148	88	46	67	18	24	20	21	3	15	3
36	59		3.5	Post. operative coma	Surg.	0.595	0.574	0.219	0.127	64	10	0	13	0	4	27	0	0	0
37	60		1.5	T.U.R	Urol.	0.547	0.094	0.113	0.104	45	3	6	25	23	35	49	15	33	8
38	43		1.5	Stone kidney	Urol.	0.485	0.257	0.175	0.168	87	0	16	4	9	11	52	3	0	1
39	58		1.5	Retention	Urol.	1.056	0.271	0.434	0.110	104	15	99	33	18	42	26	0	10	9
40	67		2.5	T.U.R	Urol.	0.658	0.417	0.151	0.118	62	47	53	32	36	30	8	3	0	12

No.	Age	Sex	Duration of fixation (days)	Cause of fixation	Department	Sperctrophotometry Absorbance				Adherence of bacteria to catheter segments						Incorporation of NSAIDs into Catheter			
						A	B	C	D	A	B	C	D	E	F	A	B	C	D
41	65		2.0	Cerebrovas. Stroke	Neuro Med.	0.175	0.103	0.114	0.087	0	3	0	0	0	1	0	0	0	1
42	40		1.5	Retention	Urol.	0.222	0.212	0.099	0.066	0	0	4	2	0	2	3	0	0	0
43	53		2.5	Stone ureter	Urol.	0.228	0.183	0.105	0.084	9	4	0	8	9	0	2	5	6	0
44	56		1.5	T. U. R	Urol.	0.400	0.375	0.114	0.082	18	0	4	8	12	0	25	3	0	13
45	48		2.0	Nephrectomy	Urol.	0.067	0.092	0.081	0.060	2	3	0	0	0	0	0	1	0	0
46	19		2.0	Septicemic shock	Int. Care	0.085	0.075	0.085	0.057	1	1	0	0	0	1	3	2	3	0
47	33		2.5	Stricture ureter	Urol.	0.179	0.254	0.079	0.080	35	8	27	4	16	12	15	0	2	0
48	63		1.5	T.U. R	Urol.	0.160	0.123	0.088	0.074	3	0	3	5	0	0	7	4	0	0
49	40		2.5	Retention	Urol.	1.052	0.566	0.211	0.135	75	14	23	0	12	5	37	0	4	0
50	62		3.0	Stone ureter	Urol.	0.076	0.070	0.098	0.102	7	2	5	7	0	0	5	2	0	4

Table (3) : Effect of different concentrations of salicylic acid on
slime production of significant slime producer
S.epidermidis isolates.

Cone. of salicylic acid	0 mM (Negative control)	1 mM	3 mM	10 mM
mean	0.675	0.430	0.197	0.130
SD	0.388	0.301	0.98	0.036
t		2.77	6.6508	7.7978
p		< 0.05	< 0.01	< 0.01
F	30.156			
P	< 0.001			

Tabel (1) : Classification of *S.epidermidis* isolates according to slime production

Type of organism	No	%
Slime producer	31	62
Non slime producer	19	38
Total	50	100

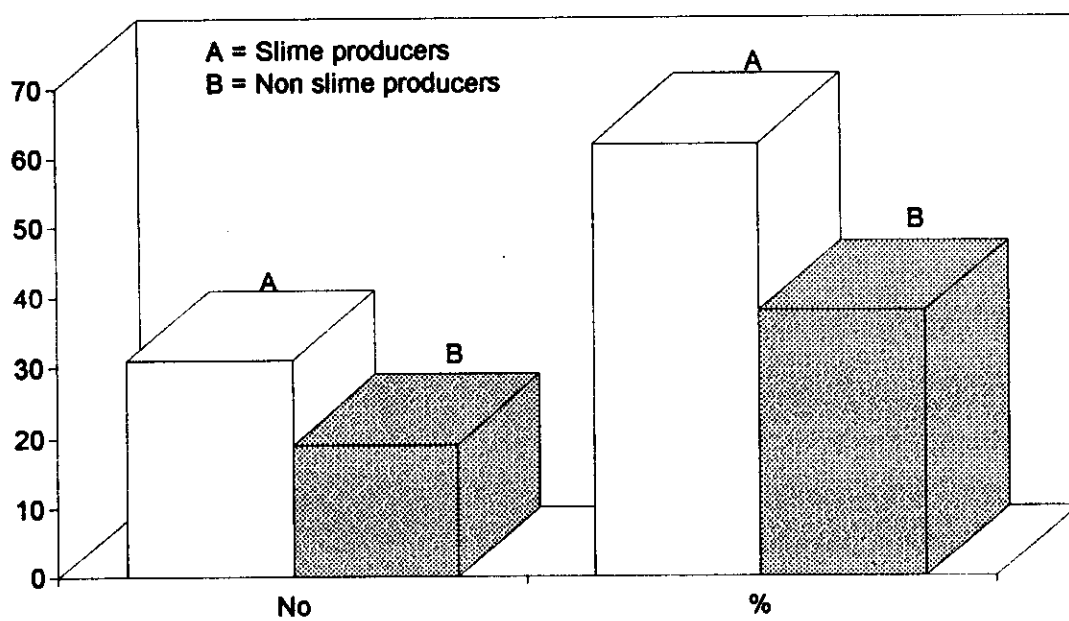


Fig. (1) : Classification of *S. epidermidis* isolates according to slime production

Table (2) : Effect of different concentrations of salicylic acid on slime production of all *S.epidermidis* isolates.

Conc. of salicylic acid	0 mM (Negative control)	1 mM	5 mM	10 mM
Mean	0.464	0.341	0.180	0.120
SD	0.387	0.288	0.135	0.045
t		1.816	4.905	6.2618
p		> 0.05	< 0.01	< 0.01
F	19.325			
P	< 0.001			

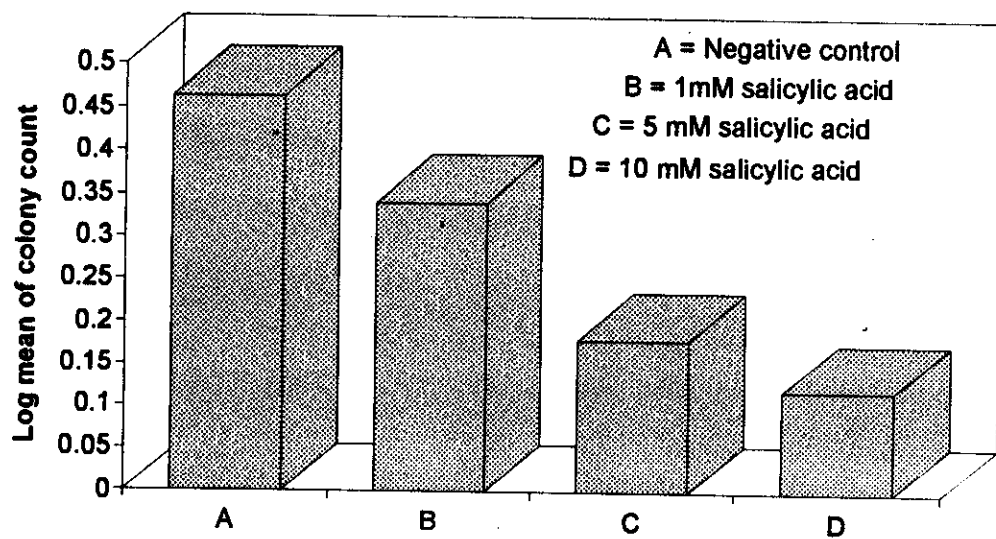


Fig. (2) : Effect of different concentrations of salicylic acid on slime production of all *S.epidermidis* isolates

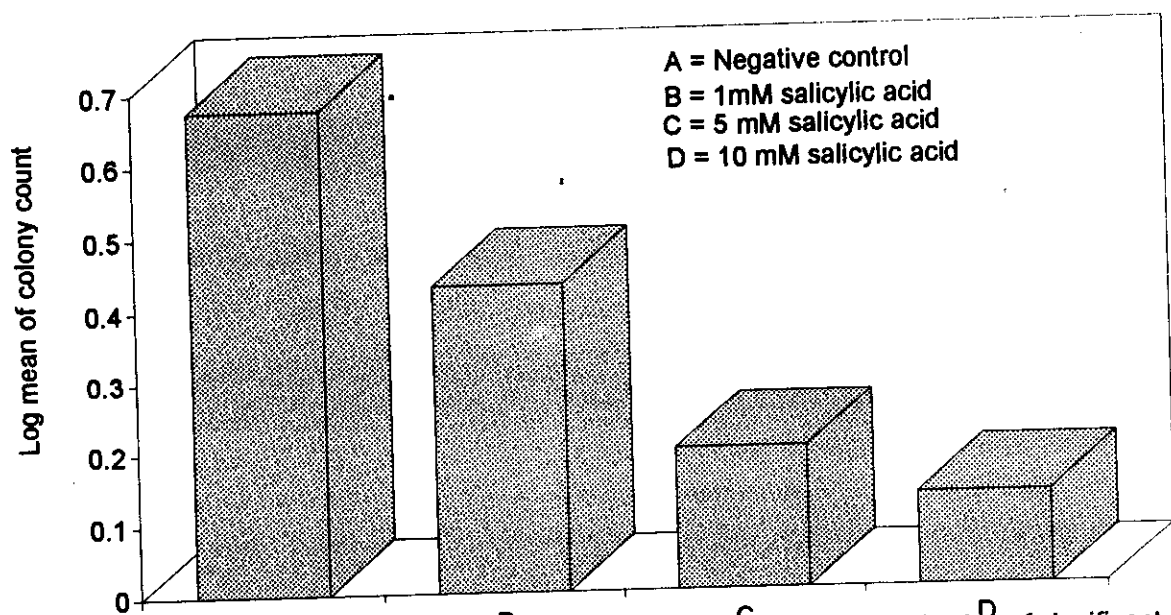


Fig. (3) : Effect of different concentrations of salicylic acid on slime production of significant slime producer *S. epidermidis* isolates.

**Table (4) : Effect of differnt NSAIDs on adherence of
S.epidemidis (all isolates) to catheter segments.**

Drugs	Negative control	Salicylic acid	Acetyl salicylic acid	Ibuprofen	Diclo- fenac	Proritam
Log mean	1.397	0.668	0.981	0.832	0.892	0.900
Log SD	0.682	0.628	0.729	0.643	0.666	0.731
t		5.565	2.94	4.260	3.749	3.52
p		0.0001	0.004	0.01	0.01	0.05
F	6.481					
P	< 0.0005					

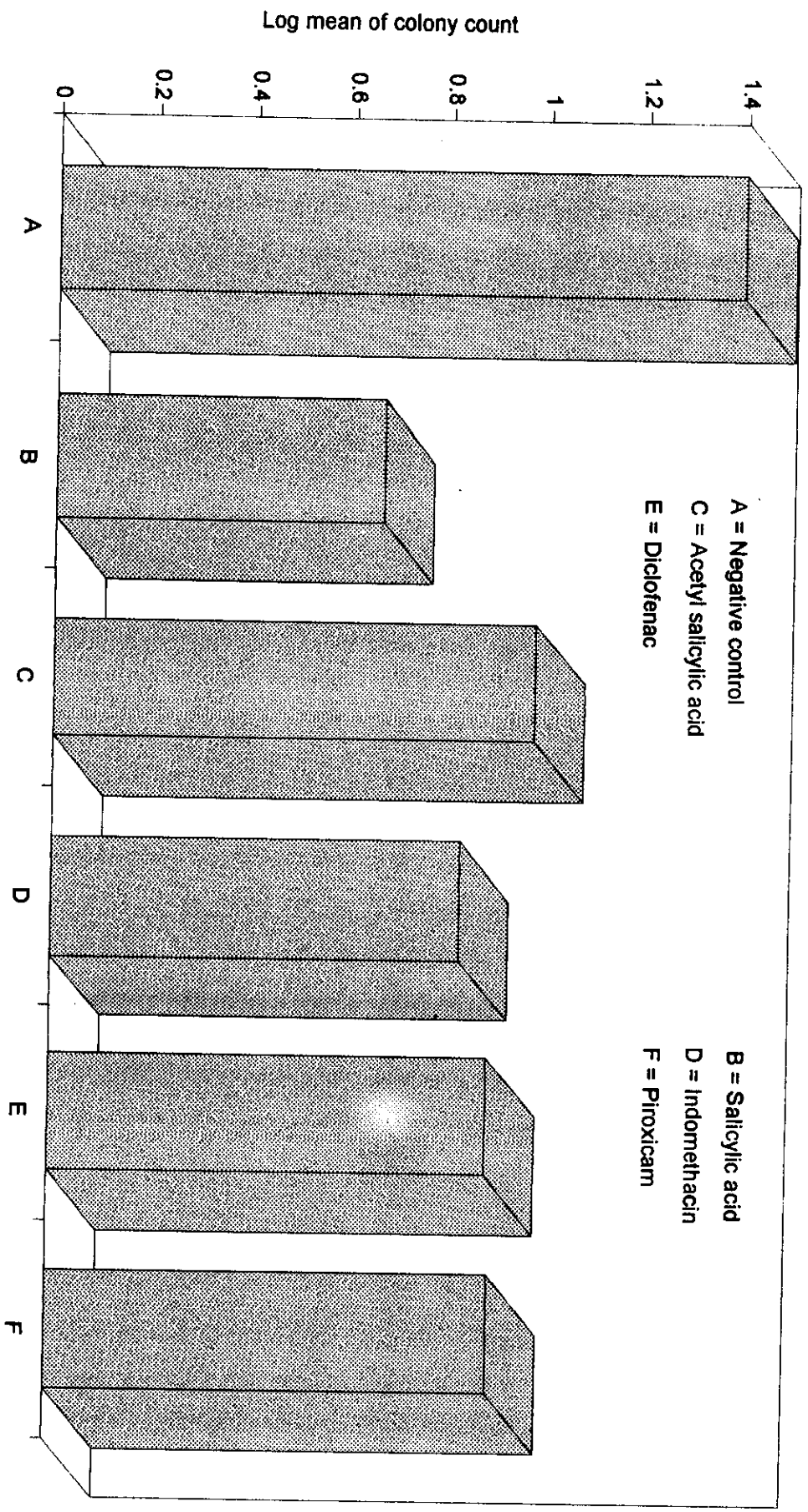


Fig. (4) : Effect of different NSAIDs on adherence of *S. epidermidis* (all isolates) to catheter segments.

Table (5) : Effece of different NSAIDs on adherence of S.epidermidis (significant slime producer isolates) to catheter segments..

Drugs	Negative control	Salicylic acid	Acetylsalicylic acid	Indomethacin	Diclofenac	Proxicam
Log mean	1.794	0.819	1.280	1.035	1.166	1.219
Log SD	0.313	0.694	0.662	0.628	0.585	0.626
t		7.137	3.910	6.0216	5.268	4.5718
p		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
F	9.207					
P	< 0.05					

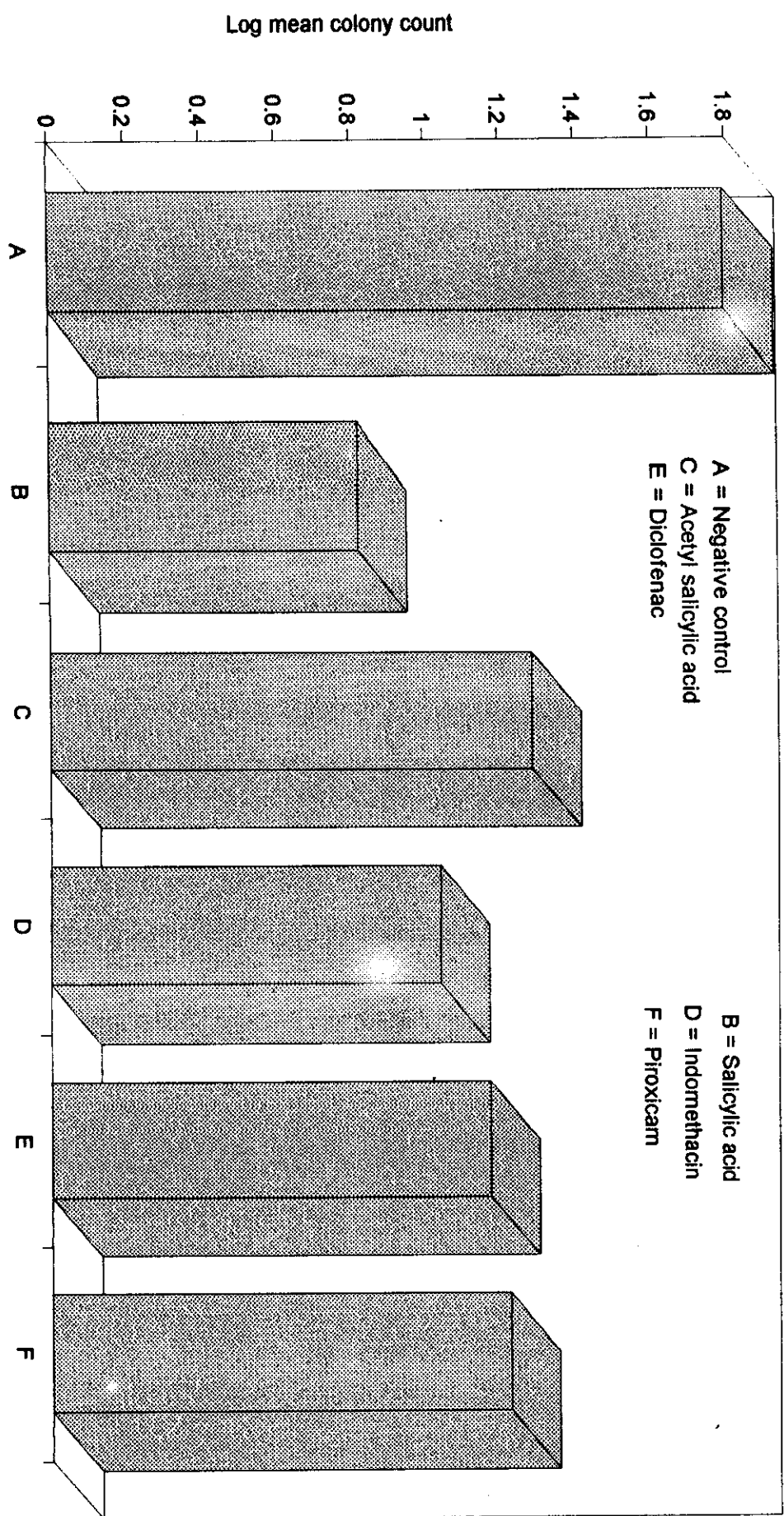


Fig. (5) : Effect of different NSAIDs on adherence of *S.epidermidis* (significant slime producer isolates) to catheter segments.

Table (6) : Effect of incorporation of NSAIDs into catheter segments on the adherence of *S.epidermidis* (all isolates) to catheters.

Drug	Negative control	Salicylic acid	Acetyl salicylic acid	Diclofenac
Log mean	1.042	0.430	0.495	0.337
Log SD	0.610	0.503	0.581	0.510
t		5.716	4.512	0.277
p		0,0001	0.0001	0.01
		P < 0.01	P < 0.01	P < 0.01
F	16.972			
P	0.0001			

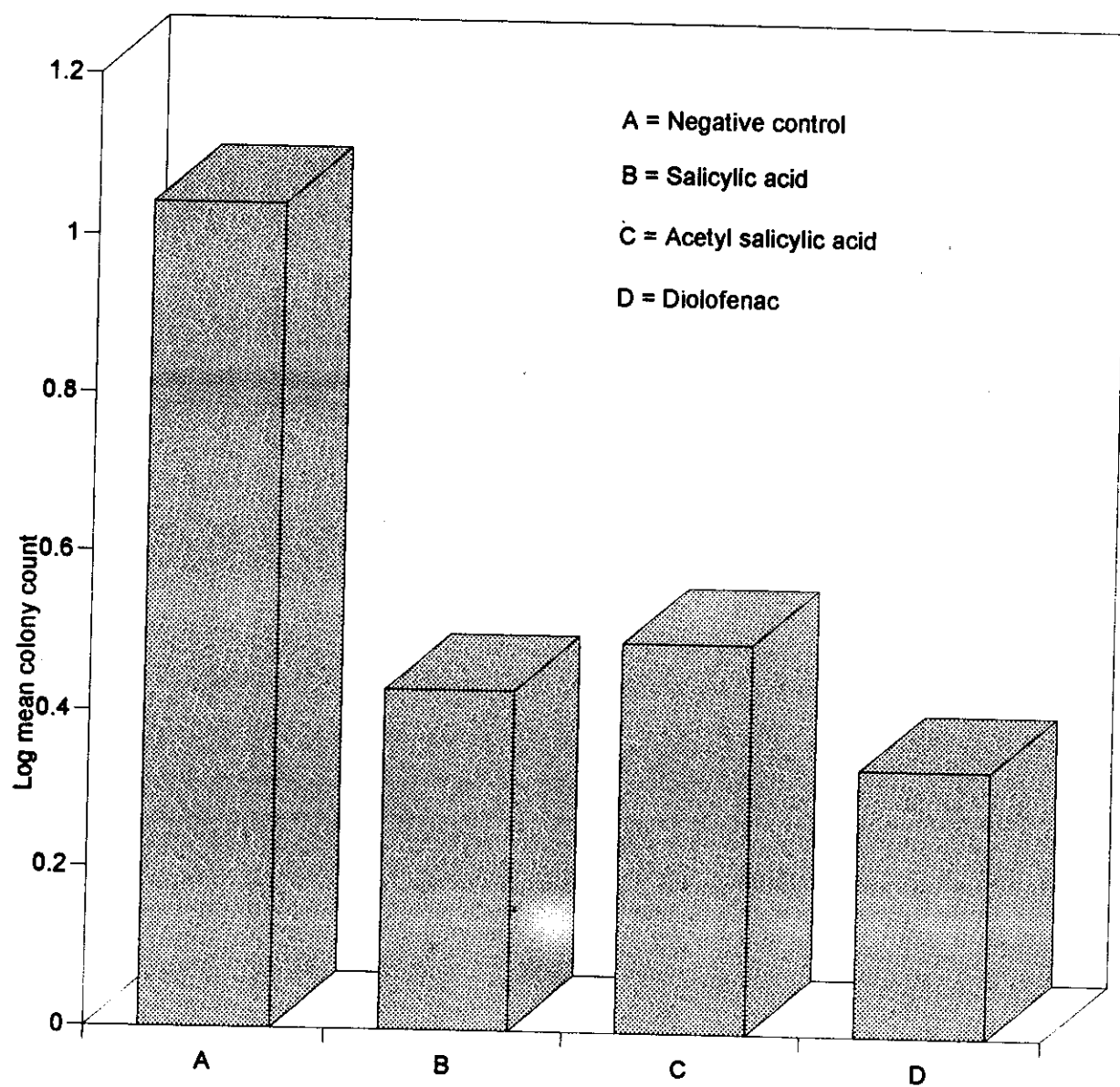


Fig. (6) : Effect of incorporation of NSAIDs into catheter segments on the adherence of *S. epidermidis* (all isolates) to catheters.

Table (7) : Effect of incorporation of NSAIDs into catheter segments on the adherence of *S.epidermidis* (significant slime producer isolates) to catheter.

Drugs	Negative control	Salicylic acid	Acetyl salicylic acid	Diclofenac
Log mean	1.398	0.561	0.670	0.524
Log SD	0.366	0.548	0.627	0.564
t		7.0679	5.576	7.237
p		< 0.01	< 0.01	< 0.01
F	18.284			
P	< 0.01			

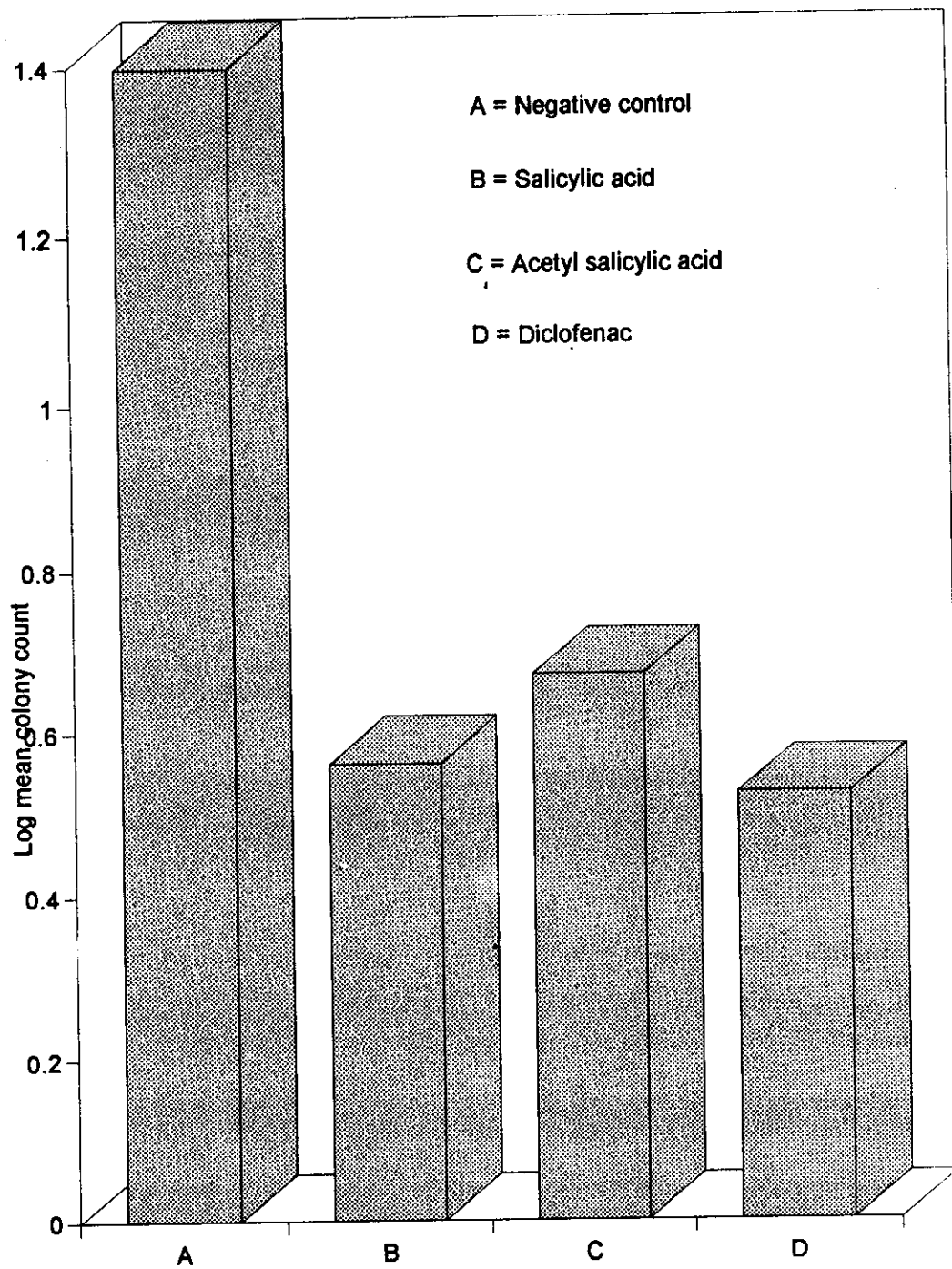


Fig. (7) : Effect of incorporation of NSAIDs into catheter segments on the adherence of *S. epidermidis* (significant slime producer isolates) to catheter.

STATISTICAL ANALYSIS

The results were analysed by suitable statistical methods which include :

(1) Arithmetic mean (x) :

It equals the sum of all observations divided by their number.

$$x = \frac{\sum x}{n}$$

Where : $\sum x$ = Sum of all observations.

n = Number of observations.

(2) Standard deviation (SD) :

It is calculated from the following equation :

$$S.D = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

Where $\sum (x - \bar{x})^2$ = sum of square differences between each observation (x) and the mean value of all observation ($\bar{x}$).

$n-1$ = number of observations minus 1 (this is because the variability of observations in the population is expected to be greater than the sample variability, so this gives a better estimation).

(3) Student's t-test (t) :

It's a test of significance for the difference between two sample means. It's calculated from the following equation :

$$t = \frac{x_1 - x_2}{s_c \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Where X_1 = mean of the 1st sample.

X_2 = mean of the 2nd sample

n_1 = number of the 1st sample.

n_2 = number of the 2nd sample.

S_c = combined standard deviation of the two samples.

(4) Anova test (F) :

Test of significance for difference between more than 2 means. i.e. when we need difference between more than 2 groups (3, 4, 5.....) of quantitative data, (F) test is used.

Significance of results

Corresponding P values for each test was directly computed by the microprocessors in which we used the one call test values.

Non Significant difference : if $P > 0.05$

Significant difference : if $P < 0.05$

Highly significant difference : if $P < 0.01$