

**The effect of previous intravenous injection of pneumococci upon experimental lobar pneumonia produced by the method of intrabronchial insufflation.**

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We wish to report a result obtained in a series of experiments in which the effect of intravenous injections of pneumococci upon subsequent experimental pneumonia was studied. Forty-nine dogs were used in these experiments. Observations were made upon the extent and morphology of the pneumonic process, the leukocytic reaction, the occurrence of agglutinins and the presence of living organisms in the blood and in the lungs. In one series, the animals were given intravenously each day for five days 0.7 c.c. of a broth culture of pneumococci per kilo of body weight. In another series graduated doses were given, beginning with 0.07 c.c. per kilo of body weight and gradually increased to the fifth and last injection of 0.7 c.c. per kilo. In both series on the sixth day, the dogs were given an intrabronchial injection of pneumococci. With groups of these animals, control dogs were also injected intrabronchially with pneumococci. The animals were killed at intervals from nineteen to forty-nine hours after the intrabronchial injection.

We wish to confine our present report to one significant result namely: the rapid disappearance of the organisms from the pneumonic lungs of the animals previously injected intravenously with pneumococci.

In previous experiments reported from this laboratory living organisms were observed in the lungs of dogs with experimental lobar pneumonia as late as the third day after the beginning of the process. The results of the lung cultures in the present experiments may be seen from the charts.

It is evident from these charts that previous intravenous injections of pneumococci bring about a destructive effect upon

the organisms in the pneumonic lung—the organisms disappear from these lungs much sooner than from the lungs of animals not previously treated.

CHART I.

## LUNG CULTURES IN DOGS KILLED IN LESS THAN 36 HOURS.

Controls.		Intravenously Injected.	
Hours.	Colonies.	Hours.	Colonies.
27	Innumerable	28½	0
30½	"	21½	0
29½	"	20	0
33	"	30	0
34	"	34½	0
31½	"	33½	1
20	+	30½	1
23	Very many	21½	1
19	Many	20½	3
23	12 + <sup>1</sup>	27	18
22½	0	29	75
		30	103
		24	Very many
		17 died	+
		20 "	Innumerable
		14 found dead	"

<sup>1</sup> Growth in water of condensation.

CHART II.

## LUNG CULTURES IN DOGS KILLED IN LESS THAN 50 HOURS.

Controls.		Intravenously Injected.	
Hours.	Colonies.	Hours.	Colonies.
42	Innumerable	45	0
41	Very many	46	0
49	Many	42	0
42	"	43	0
44½	"	43	0
48	+	41½	0
47	+	46½	0
46	25	46	0
45	3	47	0
48	0	49	0
		47½	13
		46	Very many