FIG. 1

BLENDING RATIO

TYPE	RAW MATERIAL	MIXING RATIO (WT%)
PINE BARK DRY EXTRACT	BARK OF PINE TREES EXPOSED TO INTENSE ULTRAVIOLET LIGHT ON COAST	5.0 - 9.0
FERMENTED SESAME DRY EXTRACT	SESAME SEEDS	5.0 - 9.0
GLUTATHIONE YEAST	GLUTAMIC ACID, CYSTEINE, AND GLYCINE	0.5 - 0.9
EXCIPIENT	STARCH AND LACTOSE	79.0 - 87.0

FIG. 2

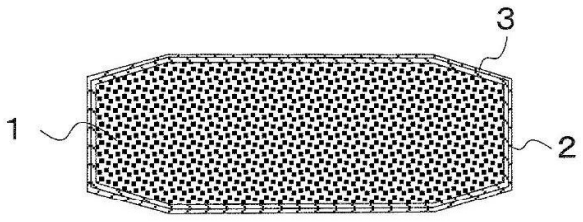


FIG. 3

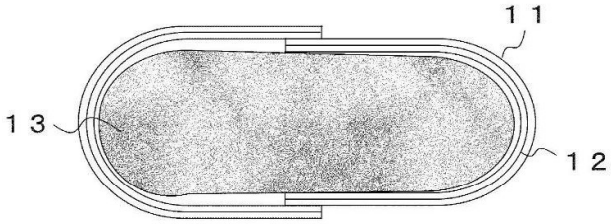


FIG. 4

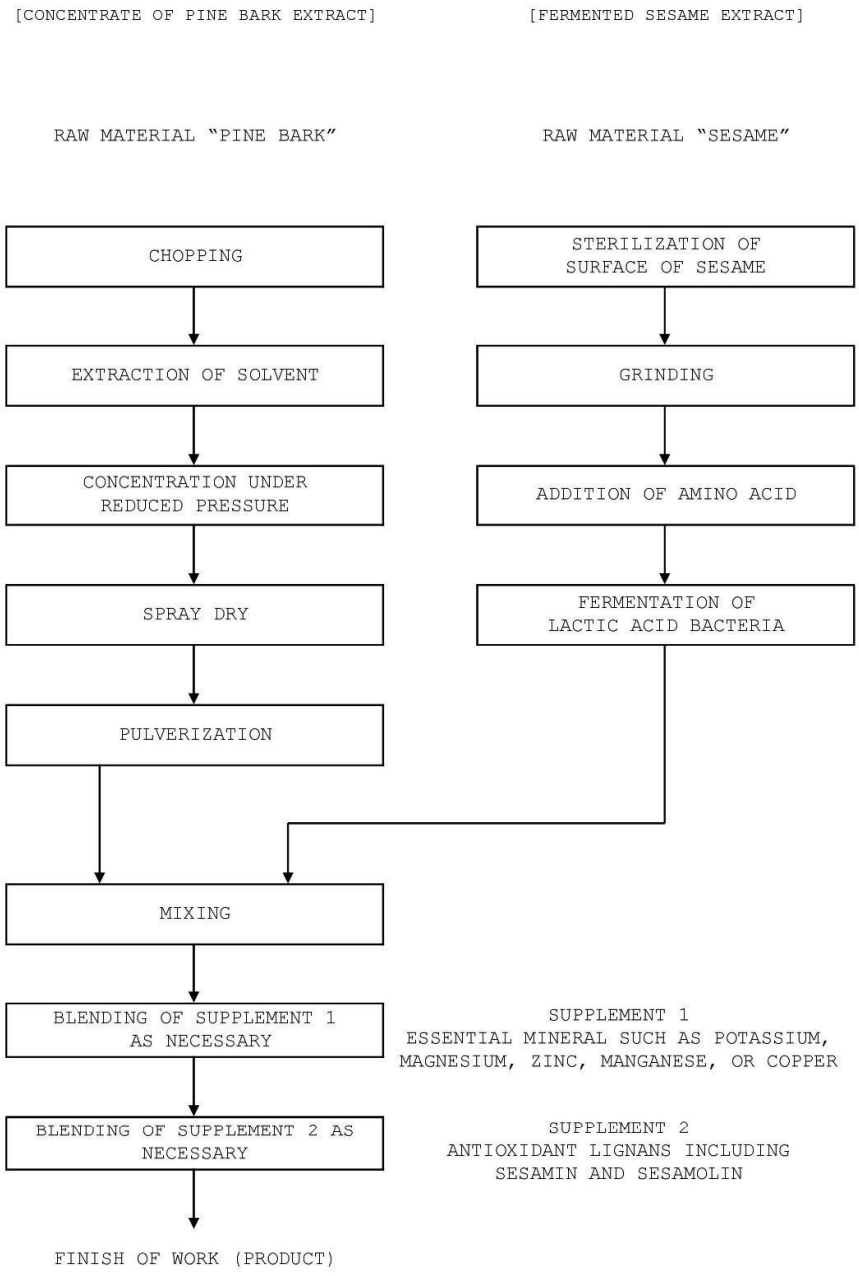

[CONCENTRATE OF PINE BARK EXTRACT]
[FERMENTED SESAME EXTRACT]
RAW MATERIAL "PINE BARK"
RAW MATERIAL "SESAME"
CHOPPING
EXTRACTION OF SOLVENT
CONCENTRATION UNDER REDUCED PRESSURE
SPRAY DRY
PULVERIZATION
STERILIZATION OF SURFACE OF SESAME
GRINDING
ADDITION OF AMINO ACID
FERMENTATION OF LACTIC ACID BACTERIA
MIXING
BLENDING OF SUPPLEMENT 1 AS NECESSARY
SUPPLEMENT 1
ESSENTIAL MINERAL SUCH AS POTASSIUM, MAGNESIUM, ZINC, MANGANESE, OR COPPER
BLENDING OF SUPPLEMENT 2 AS NECESSARY
SUPPLEMENT 2
ANTIOXIDANT LIGNANS INCLUDING SESAMIN AND SESAMOLIN
FINISH OF WORK (PRODUCT)

FIG. 5

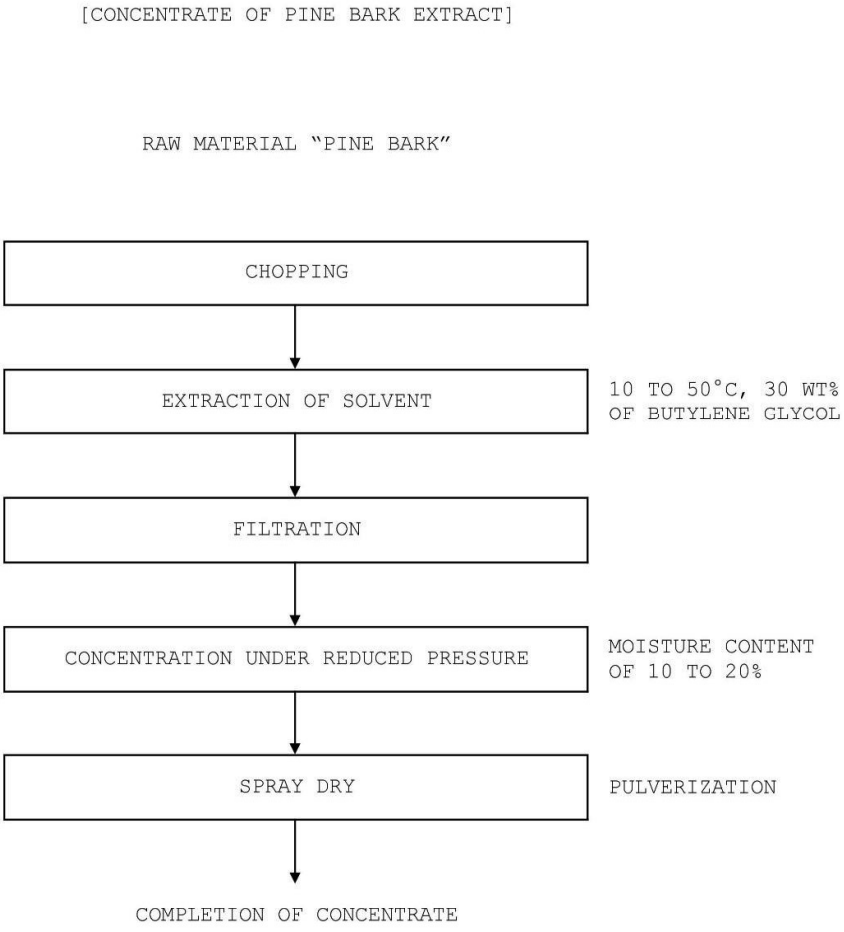

[CONCENTRATE OF PINE BARK EXTRACT]
RAW MATERIAL "PINE BARK"
CHOPPING
EXTRACTION OF SOLVENT
10 TO 50°C, 30 WT% OF BUTYLENE GLYCOL
FILTRATION
CONCENTRATION UNDER REDUCED PRESSURE
MOISTURE CONTENT OF 10 TO 20%
SPRAY DRY
PULVERIZATION
COMPLETION OF CONCENTRATE

FIG. 6

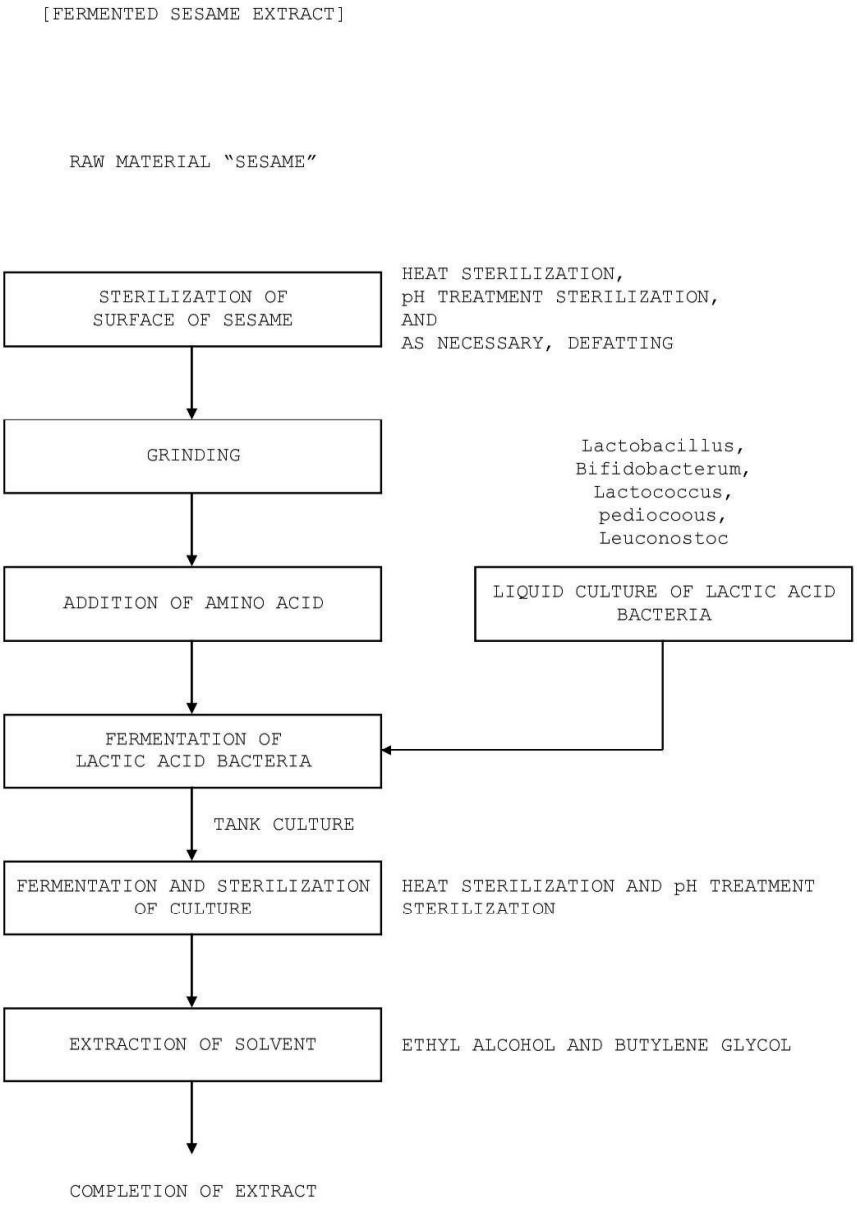

[FERMENTED SESAME EXTRACT]
RAW MATERIAL "SESAME"
STERILIZATION OF SURFACE OF SESAME
HEAT STERILIZATION, pH TREATMENT STERILIZATION, AND AS NECESSARY, DEFATTING
GRINDING
ADDITION OF AMINO ACID
Lactobacillus, Bifidobacterum, Lactococcus, pediocoous, Leuconostoc
LIQUID CULTURE OF LACTIC ACID BACTERIA
FERMENTATION OF LACTIC ACID BACTERIA
TANK CULTURE
FERMENTATION AND STERILIZATION OF CULTURE
HEAT STERILIZATION AND pH TREATMENT STERILIZATION
EXTRACTION OF SOLVENT
ETHYL ALCOHOL AND BUTYLENE GLYCOL
COMPLETION OF EXTRACT

FIG. 7

- ANP VALUES DECREASED AFTER ADMINISTRATION IN 10 DOGS OUT OF 26 DOGS
- INCREASED IN 6 DOGS AND NO CHANGE IN 10 DOGS

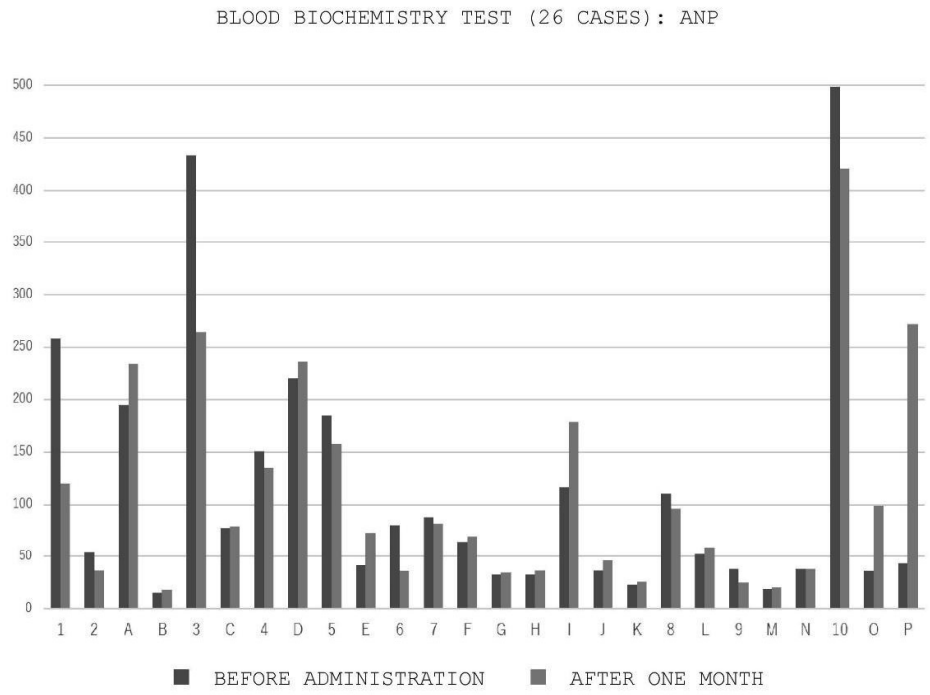


FIG. 8

CHANGES IN SYMPTOMS IN EACH STAGE

ACVIM Consensus Recommendations on Canine CHF

ACVIM GUIDE LINE	STAGE A	STAGE B1	STAGE B2	STAGE C	STAGE D
SYMPTOMS	NO SYMPTOM			MILD TO MODERATE SYMPTOMS	SEVERE HEART FAILURE
CARDIAC MURMUR	-	CARDIAC MURMUR(+)			
CARDIOMEGALY	-	-	CARDIOMEGALY(+)		
NEED FOR TREATMENT	No	No	Yes or No	Yes	Yes
ACEI			±	+	+
FUROSEMIDE	No	No	-	+	+
PIMOBENDAN			±	+	+

FIG. 9

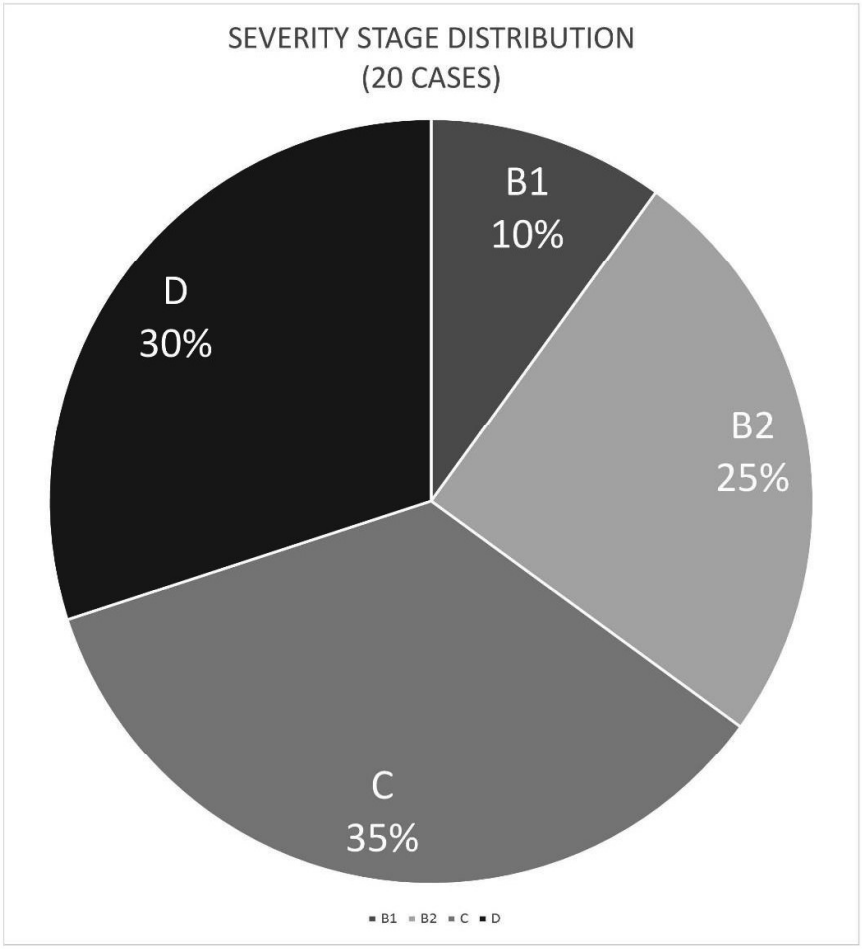
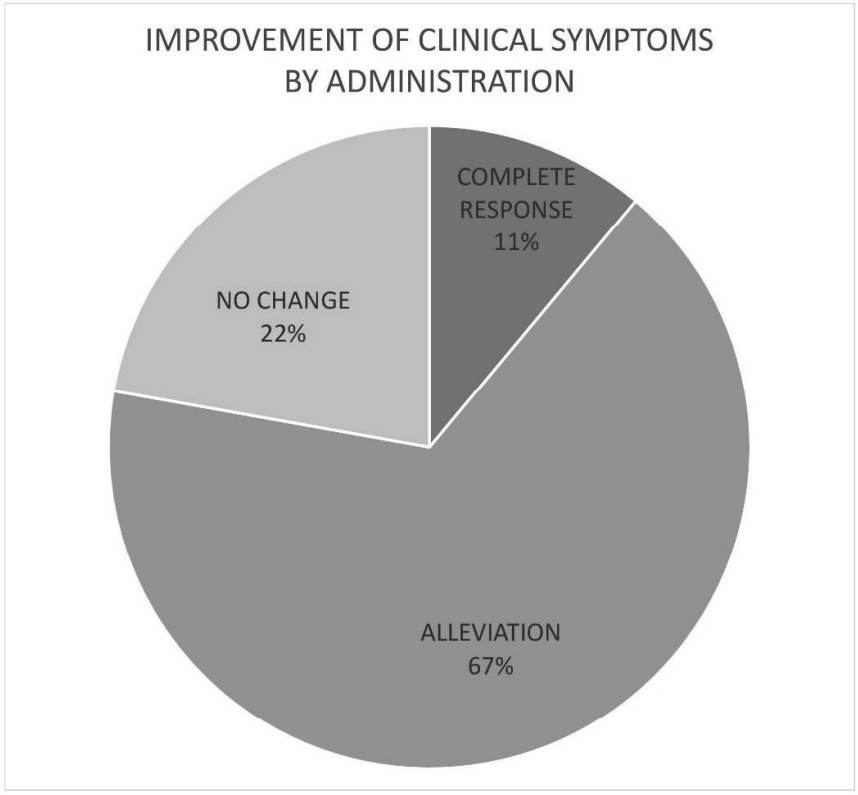
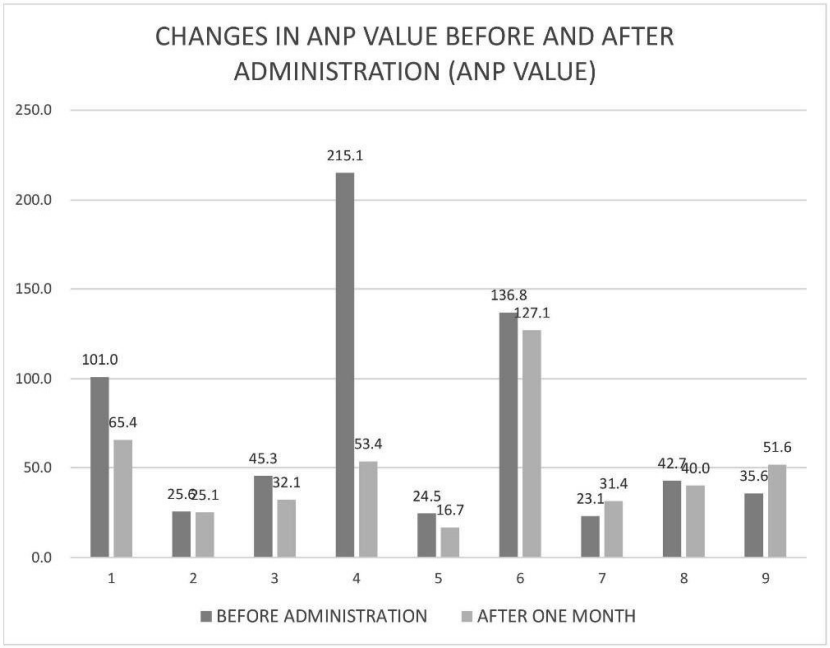

SEVERITY STAGE DISTRIBUTION
(20 CASES)
B1
10%
B2
25%
C
35%
D
30%
B1 B2 C D

FIG. 10



COMPLETE RESPONSE + ALLEVIATION = 77.8%

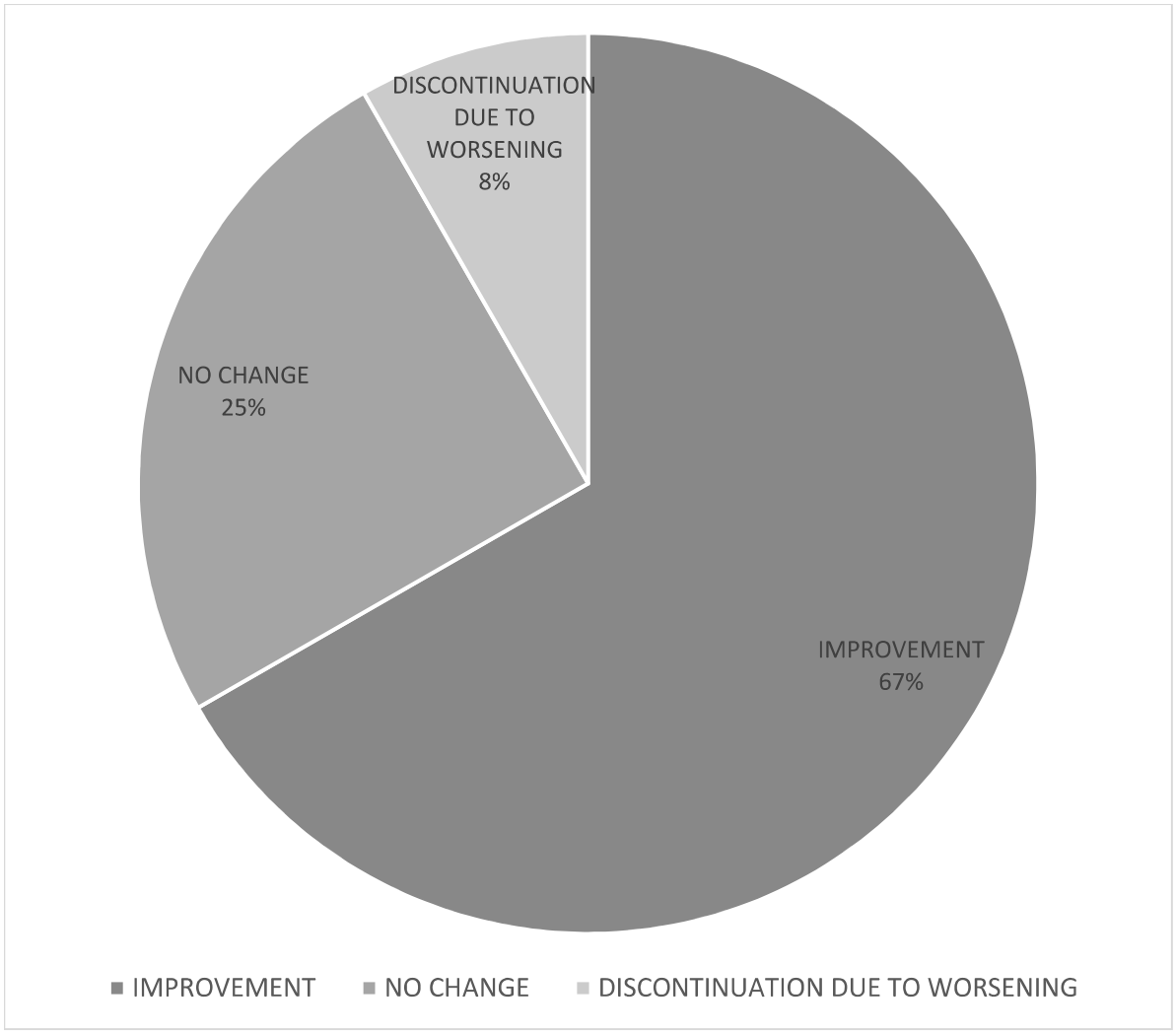
FIG. 11



GROUP A: 9 CASES

PERFORMING ANP MEASUREMENT

FIG 12.



IMPROVEMENT RATE 66.7%

FIG. 13

COMPARISON OF X-RAY IMAGES OF CHEST

BEFORE ADMINISTRATION

ON DAY 25 AFTER ADMINISTRATION



CTR:85.1

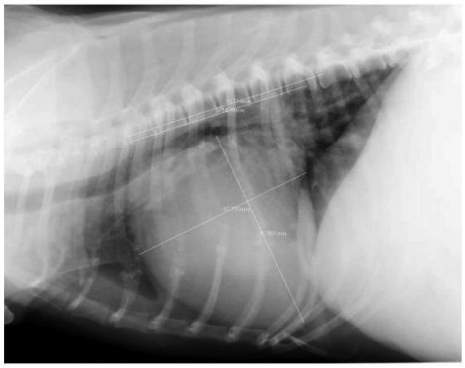
CTR:80.8%

CLEARNESS OF CONTOUR OF HEART, AND DECREASE IN OPACITY OF LUNG

FIG. 14

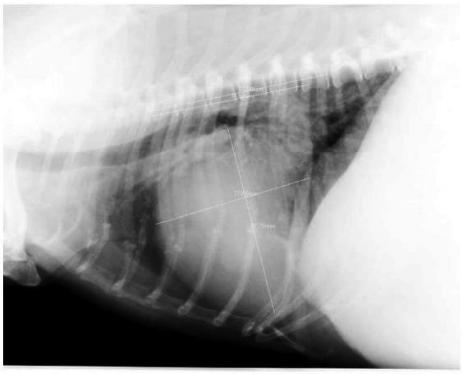
COMPARISON OF X-RAY IMAGES OF CHEST

BEFORE ADMINISTRATION



VHS:12.0V

ON DAY 25 AFTER ADMINISTRATION



VHS:11.3V

BW: 0.9 → 10.0 kg

HR: 135 → 88 bpm

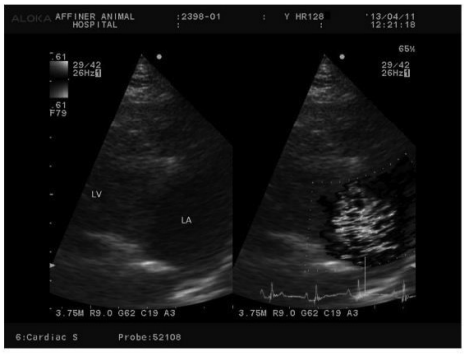
CARDIAC MURMUR:Levine 4/6 → 4/6

FIG. 15

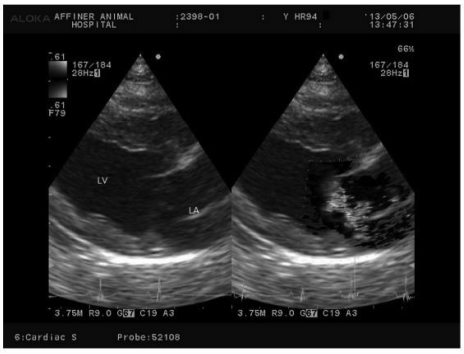
COMPARISON OF COLOR JET AREAS

RIGHT PARASTERNAL LONG-AXIS FOUR-CHAMBER CROSS SECTION IMAGE

BEFORE ADMINISTRATION



ON DAY 25 AFTER ADMINISTRATION



IT WAS PREDICTED THAT COLOR BACKFLOW JET AREA IN LEFT ATRIUM WAS SIGNIFICANTLY REDUCED AND REFLUX BLOOD VOLUME WAS REDUCED

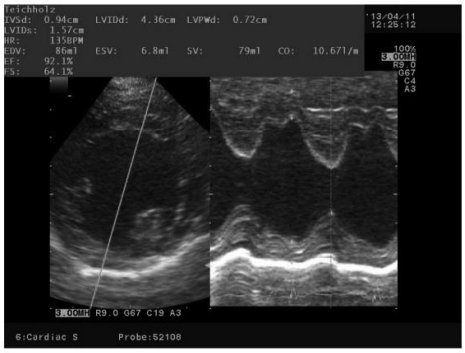
ARJ/LAA:50% → 30%

FIG. 16

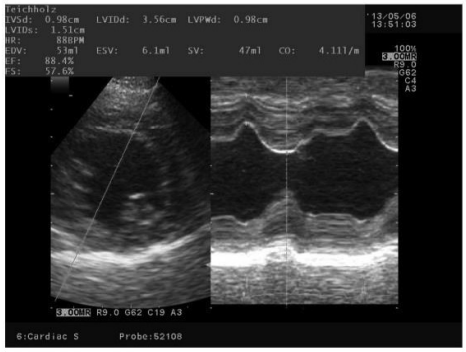
COMPARISON OF COLOR JET AREAS

RIGHT PARASTERNAL SHORT-AXIS FOUR-CHAMBER CROSS SECTION IMAGE

BEFORE ADMINISTRATION



ON DAY 25 AFTER ADMINISTRATION



LEFT VENTRICULAR INTERNAL DIAMETER END DIASTOLE(LVIDd):4.36 cm → 3.56 cm

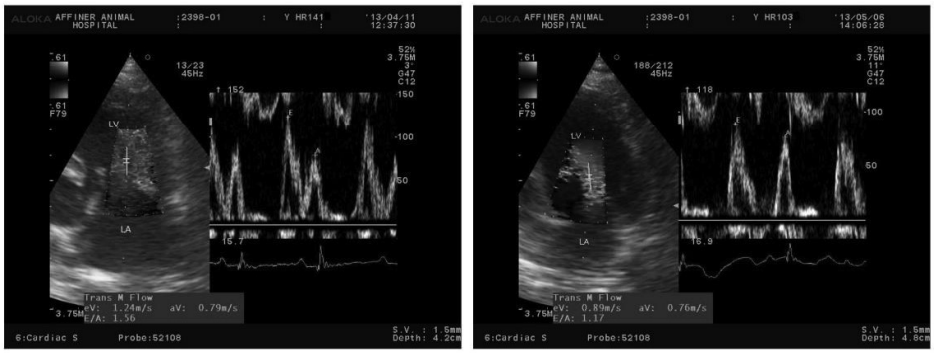
LEFT VENTRICULAR INTERNAL DIAMETER END SYSTOLE(LVIDs):1.57 cm → 1.51 cm

FIG. 17

COMPARISON OF COLOR JET AREAS

COMPARISON OF LEFT APICAL FOUR-CHAMBER CROSS SECTIONS

BEFORE ADMINISTRATION ON DAY 25 AFTER ADMINISTRATION



LEFT VENTRICULAR INFLOW BLOOD VELOCITY WAVEFORM

E-WAVE VELOCITY:	1.24 m/s	→	0.89 m/s
E/A:	1.56	→	1.17

FIG. 18

BRADYCARDIA/TACHYCARDIA SYNDROME

SEVERE BRADYCARDIA AND SEVERE TACHYCARDIA ARE REPEATED

BRADYCARDIA IS OFTEN ACCOMPANIED BY SYNCOPE

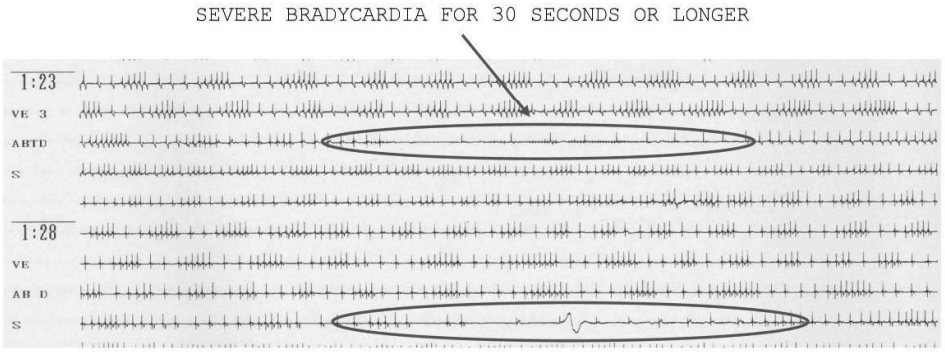


FIG. 19

CHANGE AFTER ADMINISTRATION

HEART RATE:40 → 48 times/min (↑)

BREATHING RATE:43 → 35 times/min (↓)

BLOOD PRESSURE:120/82 → 125/90 mmHg

SYNCOPE DISAPPEARS ABOUT 2 WEEKS AFTER START OF ADMINISTRATION

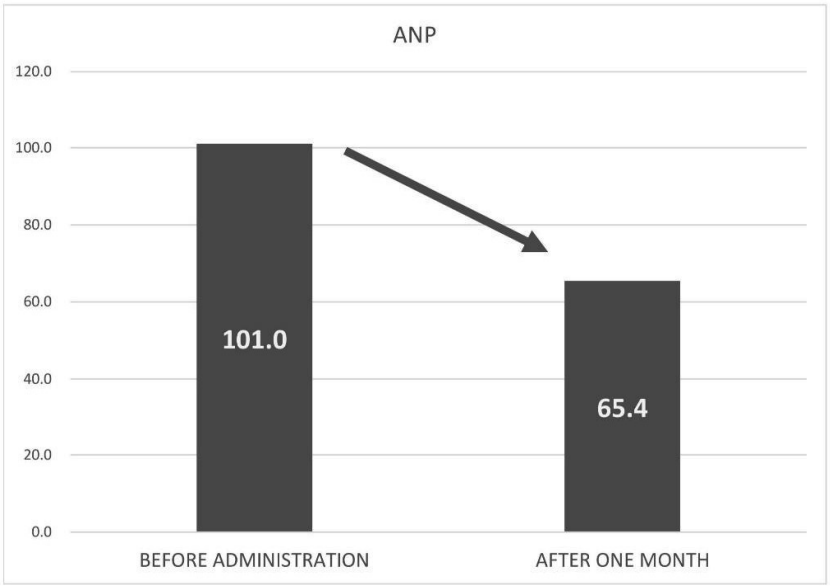


FIG. 20

COMPARISON OF X-RAY IMAGES

BEFORE ADMINISTRATION



ONE MONTH AFTER ADMINISTRATION

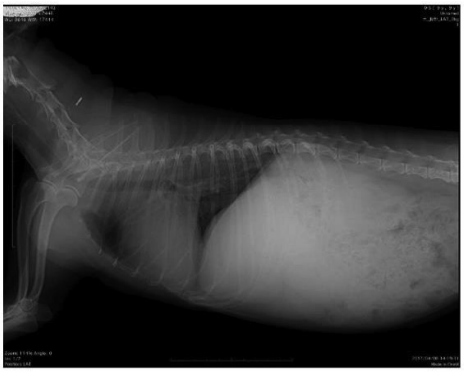


FIG. 21

COMPARISON OF X-RAY IMAGES

BEFORE ADMINISTRATION

ONE MONTH AFTER ADMINISTRATION

