

HOSPITAL CORPS QUARTERLY



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PREFACE

The Hospital Corps *QUARTERLY* was first published in 1917 as the result of the need during World War I of supplying to the Hospital Corps useful information regarding their duties and in other ways promoting the morale and efficiency of the Hospital Corps.

The purpose of the *QUARTERLY* remains the same: To serve as a medium to distribute information of interest to the Hospital Corps in the field for the advancement of efficiency and morale. It shall contain practical and useful information on all the numerous activities in which hospital corpsmen are engaged. This information includes not only hints and new wrinkles in technical subjects, but concerns the indoctrination and orientation of the new hospital corpsman in the Navy, and in his duties. It is hoped that such information will help increase the efficiency of the Hospital Corps and make it better fitted to assist in carrying out the mission of the Medical Department of the Navy. "To keep as many men at as many guns as many days as possible."

Contributions are desired from officers and men of the Hospital Corps, medical and dental officers, members of the Navy Nurse Corps, and from other sources. All members of the Hospital Corps (male and female) are expected to sustain their corps' publication by submitting articles in accordance with the instructions as given in the "Notice to Contributors."

The Bureau of Medicine and Surgery does not undertake, necessarily, to endorse all views and opinions expressed on these pages.

CLIFFORD A. SWANSON,
Surgeon General, United States Navy.

January-February-March 1948

COVER

USNH, Mare Island, Calif.
This naval hospital, built in 1870 was the first permanent one on the West Coast. It occupies 51.4 acres within the limits of the Mare Island Naval Shipyard.

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Sodium Fluoracetate Poisoning

by Alfred T. Williams
CPhM, USN

Sodium fluoracetate ("1080") is one of the most effective, potent, and at the same time, most economical of all rodenticides.

Its extreme toxicity, however, counterindicates its use by any but specially trained and supervised personnel. Its sale and dispersal should be governed with the same caution as that given to strychnine and other similar poisons. Persons selling it, or using it in their work in any manner should be required to possess special licenses issued only upon their becoming specially qualified and certified by other specially trained and indoctrinated personnel designated by the State or Federal Government.

In March 1946 the writer was ordered to one of the Pacific Island naval bases as sanitation officer. The major problem encountered was an extremely high rodent population among which *Ratus ratus alexandrinus* predominated. Due to the publicity given "1080" at that time, it was decided to use this new poison for experimental purposes, indexing its effectiveness as compared to zinc phosphide. Accordingly, an experimental cage feeding program was instituted with the following findings:

1. A 1:500 concentration of "1080" was found to be as effective, if not more so, as a 1:100 concentration of zinc phosphide.
2. Peak potency was maintained much longer than zinc phosphide.
3. Nonfatal poisoning did not create an aversion to bait treated with "1080" as it did with zinc phosphide.
4. Pregnant and lactating females required about half again as much poison to kill as did other rats.
5. Young were killed by milk from poisoned mothers.

With these findings it was decided to experiment with actual field acceptability. An adjoining small island was chosen as the site, owing to the large rodent population, isolated nature, and other factors ideal for such experimentation. A small area was chosen and set aside. Twenty-five stations were

placed over an approximate 100-foot grid. They were routinely prebaited for 4 days, and on the fifth day "1080" 1:500 was incorporated into the bait, 50 grams of poisoned bait being placed in each station. Results were beyond all expectations, more than 800 dead rats were actually recovered. One thing marred the success of this experiment. A dog on the island was killed from mauling the poisoned rats.

This recalled to mind the inability of rodents to regurgitate, and it was decided to experiment with the incorporation of an emetic with the poison bait. Tartar emetic was chosen after further experimentation by cage feeding as no noticeable loss of acceptability or toxicity was noted. By using 2 parts tartar emetic to each part "1080" it was found that a dog would regurgitate poison and recover from the same amount of "1080" as was required to kill another dog of equal weight in which the emetic had not been added. (Dogs used were ones that had been ordered destroyed, and it is felt that no inhuman suffering was caused due to lack of accompanying pain or discomfort from this poison.)

With these findings, connected with another field test of the same proportions producing comparable results, it was decided to make one grand sweep by one prebaiting and poisoning program covering the entire island on which the base was located. Stations were placed over the entire island, 5,000 in all, covering an approximate 100-foot grid as before. From prebait taken it was estimated that 250 pounds of poison bait would be required. The weighing out of the required half pound of "1080" caused the near demise of the writer.

During the weighing, a small quantity of the poison was blown into the writer's face and some of it was inhaled. A tart, sourish taste was shortly thereafter noted, followed almost immediately by a tingling sensation around the corners of the mouth and in

the nasal passages. Becoming alarmed, medical assistance was sought. Soon the entire face had become numb, and the tingling sensation was rapidly entering the arms and legs. This was followed by spasmodic contractions of the voluntary muscles, gradual loss of speech, and within 2½ hours after inhaling the powder as noted above, unconsciousness. No actual pain was noted during the entire onset.

Case History

"About 0900 21 May 1946, while weighing out ½ pound of sodium fluoracetate which was to be used in preparing 250 pounds of rat poison, a gust of wind blew an undetermined amount of the powder into the patient's face. Numbness was noted to be forming around face accompanied by excessive flow of saliva, which gradually spread to extremities accompanied by loss of speech, developing into violent epileptiform convulsions. Further convulsions occurred and continued to occur at sporadic intervals with varied intensity till about 1400. Optic activity was blurred from onset with inability to focus on objects.

"When first seen the patient was in typical grand mal type epileptiform convulsion with dilated pupils, foaming and frothing at the mouth, rolling of the eyeballs, muttering prior to and after seizures, and he was unable to distinguish words. Face, neck, chest, and exposed skin portions markedly cyanotic, and beads of moisture on face, lips, and forehead. Carpal spasm was marked, of epileptic type, inverted thumbs and flexing of fingers into cone shape. Other symptoms were generalized jerking of legs and arms, and stertorous labored breathing with mucous in throat, clenching of teeth.

"First blood pressure taken was 156/100, 15 minutes later 160/120. Pupils now contracted to pin-point due to morphine administration at onset of initial convulsion, and did not focus. Nystagmus present, ears normal, nose markedly congested, throat markedly congested with thick mucous and foam in mouth and throat. Pulsation of neck quite prominent, heart irregular as to rate, volume, and rhythm. No definite fibrillation evident. Pulse was initially 120. Marked cutaneous hyperesthesia present. (Patient later stated that bed linens felt like canvas). No Babinski, ankle clonus, Oppenheim, or Chaddock's. Elbow and wrist reflexes—marked increase. No umbilical or scrotal reflexes present. Physical examination was interrupted several times by convulsions which were controlled by sodium pentothal, 0.5 gm. in 20 cc. distilled water administered intravenously. Three ampules were required, a total of 1.5 grams, given in approximately 2 hours."

Treatment

"Morphine tartrate, grs. ½, at onset of initial convulsion, followed by calcium gluconate, 10 cc., intravenously. Immediate

gastric lavage (3 gallons sodium bicarbonate and 1 gallon lime water).

"Magnesium sulphate, saturated solution, 1 ounce and water, 4 ounces allowed to remain in stomach after completion of lavage, followed by morphine sulphate, grs. ¼. Dextrose, 5 percent, in normal saline—1,000 cc., intravenously. Sodium pentothal was administered into vein through I-V tube. Back rest at 45 degrees. Foam and mucous frequently swabbed from mouth. Mouth held open by grouped tongue blades and pleximeter handle. Oxygen tent therapy (iced to 68° F.), for a total of 1,100 liters at pressure of 10. Constant special watch assigned. Transfusion—500 cc. whole blood at 1440 and repeated at 2200. Morphine sulphate, grs. ¼ given twice during this period.

"Marked response after each transfusion accompanied by slight itching which was controlled by adrenalin, 8 minims hypodermically, given twice. Calcium lactate, grs. 15 every 4 hours. Penicillin, 30,000 units started on second day, every 3 hours and increased to 50,000 units, every 3 hours on the fourth day. Blood pressure every ½ hour later decreased to every 2 hours, ranged from high of 160/120 to low of 104/90 on 6th day. Temperature ranged from normal of 98 to highest of 102.4 on 3d day. Dropped to normal on 5th day. Pulse varied from 120 on first day to normal on 6th day.

"X-ray of chest on 3d day showed calcified nodes both bases near both hilus. Repeated X-ray on 5th day showed similar findings. Spinal tap was done on 4th day, pressure 280, Pandy negative, cell count 5, clear, spurted at first, right jugular pressure 300, left jugular pressure 300, combined 320."

Further Notes

"Petechias of both upper eye lids persisted for 5 days gradually subsiding. Complained of headache for first 4 days which subsided after spinal tap. Extremely lethargic and appetite variable for first 6 days. Soft diet for first 5 days, changed to regular on sixth. Nightly sedative necessary for rest for first 5 nights. (Nembutal grs. 3.)

"Complained of sour stomach second day which was relieved by soda mint tablets. Nauseated on third night accompanied by total of 130 cc. emesis, no blood noted. Intestinal sourness persisted for 5 days but was controlled by "Kaomagma". Bowels moved 3 times on second day but cathartic was required on fifth day. Bowel movements were natural and regular thereafter. Clinical bronchial pneumonia developed on third day, blood tinged sputum coughed up."

Laboratory Findings

Urine

5-22-46—SpGr.—1.025; R and M—Negative.

5-29-46—SpGr.—1.027; R and M—Negative.

Blood

5-22-46—Sed. Rate—9 mm; RBC—3,400,000; WBC—8,500; Neutrophils—48; Juveniles—2; Segs.—46; Eos—4; HGB—80.

5-23-46—RBC 4,850,000; WBC—8,900;
Juveniles—7; Segs.—75; Lymph—15, Eos—
3; HGB—80.

5-24-46—RBC—4,760,000; WBC—7,750;
Segs.—33; Lymphs—56; Eos—3; Basos—7;
Monos—1; HGB—75.

5-29-46—RBC—4,760,000; WBC—8,000;
Segs.—64; Eos—1, Lymphs—35; HGB—80.

Sputum

No TB or predominant bacteria found.
Facilities inadequate for further study.

X-ray

6-1-46—Comparison with two previous X-rays of chest noted above showed marked cardiac enlargement on 5-24-46 decreasing on that taken 5-26-46 and now within normal limits. Marked cardiac irritation indicated.

Electrocardiographic

6-1-46—Within normal limits.

How To Make a Postoperative Bed

by Harry Weatherby, PhM2c, USN

You have been told to make a post-operative bed for a patient who will return from the operating room, within a half hour. Good!

Of course you have collected three sheets, a clean mattress cover, two blankets, three pillows and pillow cases; and several filled hot-water bags, for he may be in need of supplemental heat.

You have made sure that the mattress cover that you have stretched upon the hospital mattress has no wrinkles. You take one of your spotlessly clean sheets and envelope it around the mattress, so that the open end will be at the foot of the bed. This sheet must be very tight; stretched almost to its endurance point, while the corners should be folded in and neatly lapped beneath the mattress. Then you place the rubber sheet over the mid-portion of the bed, stretching it very tightly to avoid the uncomfortable wrinkles. A sheet folded in half, and placed over the rubber sheet, will help assure the continued cleanliness and aridity of the mattress.

Your best sheet should be placed on top of the bed. A blanket is placed over

this top sheet. Stand at the foot of the bed and fold about 10 inches of the top sheet and blanket toward the head of the bed; then in reverse, stand at the head of the bed and fold 10 inches of the sheet and blanket toward the foot of the bed. You must decide on which side you wish to have your patient enter the bed. You have chosen the left? All right. Make neat folds of the sheet and blanket toward the right of the bed, until you have the bed cleared, and the blankets ready to be spread over the patient.

Be sure there are no glaring street and overhead lights, and that noise has been eliminated as much as possible.

You can hear the elevator grinding its way from the operating room? You are ready? You have even prepared medication and water for the patient? *Don't!* Not unless you have standing orders from the surgeon, and then, only if they are written. Be certain the postoperative orders are written.

Greet the patient with a smile and a kindly word; don't be a sour-puss. Your cheerfulness may often be as important to a P. O. case as the most carefully executed nursing care.

The average World War II veteran served in the armed forces for about two and one-half years, Veterans' Administration estimates.

By October 1, compensation and pensions were being paid to 809 veterans of the Indian Wars, 84 Civil War veterans, 437,768 World War I veterans, 42,854 former members of the regular establishment, and 1,715,946 veterans of World War II, Veterans' Administration said.