CALCIUM SUCCINATE WITH ASPIRIN IN THE TREATMENT OF RHEUMATIC DISEASE

(I) A CLINICAL EVALUATION*

BY

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“Dolcin” is composed of calcium succinate 2·5 gr. with aspirin 3·9 gr. The supposed action of the calcium succinate is to increase tissue oxygenation and thereby to increase the action of the aspirin (*Bureau Invest.*, 1949). Szucs (1947) claimed that succinic acid has a stimulating effect on cellular respiration and protects tissues against impairment of cellular respiration. He believed that the combination of succinic acid with salicylates in proper doses and proportions is more effective and better tolerated than salicylates alone.

In November, 1947, we were given the opportunity to make a clinical evaluation of this drug at the Arthritis Clinic of the Newark Presbyterian Hospital in Newark, New Jersey.

Method

Dolcin was administered according to manufacturer's recommendations (see p. 121 below). After several months of this routine, we substituted another tablet which had the exact appearance of Dolcin, including the raised letter “D” as on the Dolcin tablet, but containing only 3·9 gr. aspirin and no calcium succinate. The patients were unaware that they were taking not D (Dolcin) but D control, as we called the aspirin tablet. No other medication was given. Several patients who had been on physical therapy had to be started again in order not to lose them from the study.

Before beginning clinical analysis all cases underwent a re-evaluation of their arthritic status by complete physical examination, X-ray examination, and laboratory studies. These included a complete blood count, urine analysis, sedimentation rate, blood chemistries such as uric acid, non-protein nitrogen, and cholesterol. All cases studied were seen at random by all the workers in the clinic to eliminate personal reactions. Numerous rechecks, x rays, and laboratory studies were done throughout the survey. Several patients who were given Dolcin, but stopped after a short time, are not included in the study.

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Case Reports

Case 1. C.G., 58-year-old female, suffering from post-menopausal osteo-arthritis of the knees, of 8 years' duration, and obesity. X rays showed osteo-arthritic lipping of the knees. All laboratory findings were normal except the erythrocyte sedimentation rate which was 19 (Cutler method). She was treated on Dolcin and D control from January 16, 1948, to November 5, 1948. There were periods of relief with both therapies. The patient stated that much more relief was afforded by loss of weight, proper shoes, and support to the knees, than by the Dolcin treatment.

Case 2. E.H., 64-year-old female, suffering from osteo-arthritis of the hands with osteo-porosis of 3 years' duration. All laboratory findings were normal. This patient had been taking 10 gr. sodium salicylate every 3 hours with fair results. This was stopped for one month and with return of symptoms Dolcin was started on January 9, 1948. The patient experienced relief from pain, but no increase of functions. She was then switched to D control and after several months the condition was unchanged. She still had relief from pain but the stiffness of the metacarpal-phalangeal joints of the right hand continued. She left the neighbourhood while on D control on September 10, 1948, and has not been seen since.

Case 3. J.B., 58-year-old female, weight 283½ lb. (over 20 st.), suffering from osteo-arthritis of both knees, of 12 years' duration. All laboratory findings were normal. Sodium salicylates 10 gr. every 3 hours was started on December 12, 1947. On January 9, 1948, she was changed to Dolcin, with no change in condition. When her weight increased, by February 20, 1948, to 287 lb., she was told that unless she adopted a weight-reducing diet we would not continue therapy, and she was not seen after this, but her condition both subjective and objective was unchanged by the six weeks' treatment.

Case 4. M.C., 54-year-old female, weight 92 lb. (6½ st.), suffering from rheumatoid arthritis, which had begun 7 years before with rheumatoid changes in hands and knees. She was placed on sodium salicylate 10 gr. every 4 hours with good relief from pain. Because of enlarged cervical glands and a persistent leucocytosis of over 20,000 with marked lymphocytosis, the possibility of lymphatic leukaemia was considered and bone-marrow studies were done. The findings were suggestive of lymphatic leukaemia and we were advised to watch her.

After an examination in December, 1947, x rays were taken which showed marked rheumatoid changes in both wrists, and ankylosis and erosion of the distal ends of the ulnas. The laboratory findings were as follows:

Haemoglobin: 88 per cent.
Red blood count: 4,400,000.
White blood count: 30,650.
Differential: lymphocytes 80 per cent.; polymorphonuclears 20 per cent.
Non-protein nitrogen: 28.
Blood sugar 110 mg.
Uric acid 4 mg.

Dolcin was started on January 4, 1948, sodium salicylate having been discontinued in September, 1947. The patient felt considerably improved except for a flare-up of rheumatoid arthritis in March and April, 1948. On October 22, 1948, D control was started. In March, 1949, while she was still on D control, improvement began and continued until April 29, 1949, when another exacerbation of rheumatoid arthritis occurred. The general condition of the patient was unchanged.

Case 5. J.S., 60-year-old female, weight 103½ lb. (about 7½ st.), suffering from generalized osteo-arthritis. She was referred to the arthritis clinic for pains of 10 years' duration in hands, knees, and cervical spine. All laboratory findings were normal. The patient was started on Dolcin on January 9, 1948, and the response was similar to that experienced with sodium salicylate. She took Dolcin until May, 1948, when it was

stopped because of abdominal cramps. Dolcin was started for another month on September 24, 1948, and then stopped again. On November 19, 1948, after a month's rest, D control was started and the patient now stated that her relief from pain was greater. On April 21, 1949, she developed cramps in the legs which may have been due to intermittent claudication, and was referred to the cardiac clinic.

Case 6. S.P., 67-year-old male, suffering from osteo-arthritis of knees and Parkinson's disease. All laboratory findings were normal. On January 16, 1948, he was started on Dolcin. On January 30, 1948, he still felt no improvement. On May 28, 1948, he stated that he "felt terrible", and complained of gas, heartburn, and constant pain, stating that "pills don't help at all". The haemoglobin dropped and the sedimentation rate increased while on Dolcin, and the patient, feeling no better, refused to continue Dolcin or D control.

Case 7. J.W., 69-year-old male, suffering from destructive osteo-arthritis of the right hip. He felt better at times on various regimes, such as deep x-ray therapy, foreign protein, salicylates, local procaine, crude liver, physical therapy, and prostigmin. Dolcin was started on February 13, 1948, with mild subjective improvement at first, but with no objective improvement. After changing to D control, there was continued subjective improvement until October 8, 1949, when pains in the right hip recurred and D control was stopped.

Case 8. X.Y., 66-year-old female, suffering from osteo-arthritis of the lumbar vertebrae with pain which radiated from the left hip to the ankle. All laboratory findings were normal. Previous therapies had included diathermy, foreign protein, and Vitamin B complex, all with moderate remission but never with complete clearing of pain. X ray examination in December, 1947, showed no change. On February 20, 1948, she was started on Dolcin, and there was no response up to October 15, 1948. Then she refused to start D control as Dolcin did "no good".

Case 9. A.L., 72-year-old female, suffering from osteo-arthritis of both hips and lumbo-sacral joints, with severe pain in the lumbar area of 10 years' duration. She improved on neither Dolcin nor D control, from January 7, 1949, to October 23, 1949, and medication was therefore stopped. There was gastric irritation from both Dolcin and D control.

Case 10. M.R., 64-year-old female, suffering from osteo-arthritis with lipping of external condyle of right tibia. All laboratory findings were normal. On June 25, 1948, Dolcin was started, and she felt better at first but later the pains recurred. On October 14, 1948, D control was started and no difference in reaction resulted. By May 27, 1949, there was no change in her condition.

Case 11. H.S., 72-year-old female, suffering from osteo-arthritis of hips and knees. All laboratory findings were normal. On February, 1949, she was started on D control with no effect, and on June 24, 1949, she was started on Dolcin, also with no effect. She was replaced on D control on August 25, 1949, and when there was still no effect all therapy was stopped on October 23, 1949.

Case 12. W.S., 58-year-old male, suffering from rheumatoid spondylitis of 6 years' duration. Dolcin was started on January 9, 1948, without any effect. As the patient was in severe pain, x-ray therapy was instituted in August, 1949, and on September 16, 1949, D control was started, but it was stopped on October 21, 1949, as there was still no change in his condition.

Summary

(1) During a two-year period, the action of "Dolcin" (a proprietary tablet containing aspirin 3.9 gr. and calcium succinate 2.5 gr.) was compared with that of aspirin alone in doses similar to that contained in the tablets.

(2) A complete course of treatment was given as recommended by the

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manufacturer, and its effect compared with that of aspirin alone given by a similar course in similar doses.

(3) Although "Dolcin" often gave relief from pain, the relief was symptomatic only, and the patient was no better than when aspirin was given alone.

REFERENCES

- Bureau of Investigation (1949). *J. Amer. med. Ass.*, **141**, 549.
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Evaluation Clinique de "Dolcin"

RÉSUMÉ

(1) Pendant une période de deux ans, l'action de "Dolcin" (spécialité médicale de comprimés contenant de l'aspirine 3·9 gr. et du succinate de calcium 2·5 gr.) fut comparée à celle de l'aspirine seule en doses similaires.

(2) On soumettait les malades à une cure complète selon les instructions des fabricants et on comparait l'effet à celui obtenu par une cure similaire d'aspirine seule en doses similaires.

(3) Bien que "Dolcin" faisait souvent diminuer la douleur, le soulagement n'était que symptomatique et le malade ne se portait pas mieux que quand il prenait de l'aspirine seule.

Valoración Clínica de "Dolcin"

RESUMEN

(1) Durante un período de dos años la acción de "Dolcin" (específico en forma de comprimidos conteniendo aspirina 3·9 gr. y succinato de calcio 2·5 gr.) fué comparada a la de aspirina sola en dosis similar a aquella contenida en los comprimidos.

(2) Los enfermos fueron sometidos a un tratamiento completo según la recomendación del fabricante y los efectos comparados con aquellos de la aspirina sola, administrada de manera semejante y en dosis similares.

(3) Aunque "Dolcin" frecuentemente calmó el dolor, el alivio fué meramente sintomático y los enfermos no se sintieron mejor que cuando tomaron simplemente aspirina.

(II) CALCIUM SUCCINATE WITH ASPIRIN AS AN ANTI-RHEUMATIC AGENT*

BY

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A clinical evaluation of "Dolcin" (calcium succinate 2·5 gr. with aspirin 3·9 gr., see p. 118) was conducted in the Rheumatology Clinic in the Out-Patient Department of the Georgetown University Hospital between August, 1948, and August, 1949. Four cases of rheumatoid arthritis and five cases of osteo-arthritis were given this drug in accordance with the manufacturer's instructions:

IT IS RECOMMENDED that not fewer than TWELVE tablets be taken daily (three tablets with water before each meal, and three at bedtime) until acute symptoms are relieved. Then, follow this with EIGHT TABLETS (two tablets, four times) daily for ten weeks . . . or until all symptoms disappear. At this time, cut the dosage to FOUR TABLETS (one tablet, four times) for eight weeks more.

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