A SIMPLE METHOD OF PREPARATION OF COLLOIDAL FERROUS IRON FOR INTRAVENOUS ADMINISTRATION*

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It is frequently desirable to administer iron by vein in either experimental studies or for therapeutic purposes. When given by this route the iron is retained by the body and, as has been pointed out, can be shown to be utilized completely by the body in the production of red cell hemoglobin in iron-depleted anemic dogs. When ionizable forms of iron are very poorly tolerated when given by vein.

During the course of development of methods of electroplating iron for studies of its radioactive isotopes a simple means of obtaining a high degree of dispersal of a colloidal form was encountered which may prove of value to other investigators, especially those interested in parenteral therapy. Toxicological studies have been carried out to a very limited extent. Quantities of 30 to 50 mg. of iron have been administered by vein to dogs on numerous occasions without any gross clinical symptoms or untoward reactions, and it is quite possible that much larger doses may be given safely.

Starting with a solution of ferric chloride, enough cevitamic acid is added to reduce the iron to the ferrous state (about 3 mg. of cevitamic acid to each mg. of iron present). This is then added to an equal volume of a 6 per cent solution of gelatin especially prepared for intravenous use.2 Dilute (10 to 20 per cent) NaOH is added dropwise until color develops, at which point it has been found that the pH is in the range of 5 to 6. The resultant solution has a deep purple-brown color to transmitted light and a greenish black sheen to reflected light. It is quite stable at room temperatures. When stored in a refrigerator, the material solidifies and may be made available for injection by heating gently.

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