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Commentary

Comment on the Gadolinium and Chelation Therapy Controversy- An update

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Brief Commentary

In regards to recent publications on Gadolinium deposition disease and chelation therapy, this updated comment seems warranted. Our last article Gadolinium in Medicine-An Evaluation and Update, published on Sept. 14.2020, evaluated Gadolinium-Based Contrasting Agents (GBCA) and the role of chelating agents in reducing gadolinium exposure. The effectiveness of various chelating agents in binding and excreting gadolinium after GBCA exposure were discussed. In-house data confirmed a 2018 statement by the Federal Drug Administration (FDA) that gadolinium is renally eliminated without the use of chelating agents, and confirmed that chelation therapy does not affect gadolinium binding and excretion [1].

As a reminder: In 2016, data provided by Semalka et al suggested that the DTPAs (diethylene triamine pentaacetic acid) 'detoxify' gadolinium after GBCA retention, but other researchers could not support this [2]. In 2020, Layne et al reviewed clinical studies and supported our previous findings [3]. Interestingly, a recent article, published July 25, 2024 in Frontiers in Toxicology claimed that chelation treatment with IV DTPA chelation chelating resulted in "near-cure in patients with Gadolinium-deposition disease". This article was retracted without explanation [4].

To confirm or contradict available information, we once more searched the data base of Micro Trace Minerals GmbH laboratories (MTM) to locate pairs of urine tests on gadolinium before and after chelation.

As previously, samples had been submitted by various clinics and the information provided included patient age, sex and date of sampling. No information had been provided regarding the patient's health issue, or the type or time of GBCA administered. We located and only evaluated sample pairs, representing data from 2021 to 2024. The tables below show urine as previously, samples had been submitted by various clinics and the information provided included patient age, sex and date of sampling. No information had been provided regarding the patient's health issue, or the type or time of GBCA administered. We located and only evaluated sample pairs, representing data from 2021 to 2024. The tables below show urine test results before and after chelation, involving various chelating agents. The method utilized: ICP-MS with cell technique. Test values are rounded.

Patient/Clinic	Test date	Baseline	DMSA oral	Chelation effect
NS	01-Dec-2	274	170	None
ASvK / Dr B	12-Jan-23	162	184	None
KK / Dr B	09-Mar-23	119	115	None
TD / Dr B	11-Mar-24	147683	12156	None
SM / Dr B	28-Mar-24	203	168	None
MP / Dr B	13-May-24	10574	5339	None

Table 1: Urine test result in mcg/L Gadolinium before and after oral chelation with DMSA.

Patient/Clinic	Test date	Baseline	CaEDTA iv	Chelation effect
MB / Dr TL	16-Aug-21	900	535	None
UA Dr. N	06-Sept-21	2578482	855567	None
BE / HP W	07-Jun-22	511	369	None
BK /Dr TL	19-Jan-23	320197	9160	None

Table 2: Urine test result in mcg/L Gadolinium before and after oral chelation with CaEDTA.

Patient/Clinic	Test date	Baseline	CaEDTA iv	Chelation effect
KP / Dr Z	25-Oct-21	658	649	None
CC / Dr T	03-Feb-22	505	459	None
VL / Dr K	14-Mar-22	259	245	None
IS / Dr G	22-Sept-22	19234	11197	None
AS / Dr M	12-Jun-23	478007	454757	None
DM / Dr G	05-Dec-24	5664	2215	None

Table 3: Urine test result in mcg/L Gadolinium before and after oral chelation with DTPA.

Patient/Clinic	Test date	Baseline	DMPS iv	Chelation effect
HS/ HP S	22-Mar-21	223	90	None
CM	21-Jun-21	171	132	None
HZ / Dr FV	25-Jul-22	6616	6088	None
OM / D LG	23-Jan-25	15237	4410	None

Table 4: Urine test result in mcg/L Gadolinium before and after oral chelation with DMPS.

The authors realizes that more in-debt studies are needed to clarify questions surrounding this issue. This would be possible if clinics submitted urine samples of patients who had received GBCAs. For a well-designed study, urine samples taken before and after chelation would be needed. In addition, information about the type of GBCA (linear or macrocyclic) administered plus the time of administration must be provided. Clinics interested in participating in such study are asked to contact the authors for details.

References

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