**Table 1: Uncontrolled clinical trials of DCA for cancer**

Source: Timm Höres, Markus Horneber, CAM-Cancer Consortium. Dichloracetate [online document]. July 13, 2016.

| Study | Design | Participants | Treatment | Outcomes | Results | Comments |
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| Michelakis 2010 | Experimental, uncontrolled (Phase I/II) | 5 patients with Glioblastoma multiforme (GBM), 3 with recurrent GBM (pts. 1-3), 2 with newly diagnosed GBM (pts. 4,5) | Intervention: DCA, 12.5 mg/kg orally, twice daily for 1 month, then 25 mg/kg orally, tid (dose deescalation when dose-limiting toxicity occurred), treatment duration: up to 15 months;<br><br>Concurrent treatments: Patients with recurrent GBM: none; patients with newly diagnosed GBM: subsequent (pt. 4) or simultaneous radiotherapy and temozolomide (pt. 5) | Clinical outcomes: tumour response, time to progression, adverse effects<br><br>Other outcomes: plasma levels of DCA and other laboratory parameters | Tumour response: "*some evidence of radiologic regression on MRI*" (pts 1, 4, 5). "(…) *Patient 2 required drainage of a cyst and debulking in month 11 of DCA therapy*."<br><br>Time to progression: "*All, except patient 3, were clinically stable at month 15 of DCA therapy and alive at month 18*"<br><br>Adverse effects: reversible dose-dependent peripheral neuropathies in all patients, that regressed when the dose was decreased to 12.5 mg/kg per day. | Very small experimental study with a questionable partial response in 1 out of 3 pts. that solely received DCA.<br><br>Doses until 50 mg/kg daily were tolerated without severe adverse effects |
| Garon 2014 | Experimental, uncontrolled (phase II) | 1 patient with stage IV breast cancer and 6 patients with stage IV non-small cell lung cancer (NSCLC)<br><br>Patients were reported to had multiple pretreatments that were not specified | Intervention: 6,25mg DCA/kg orally, twice daily until progression or unacceptable toxicity; one dose de-escalation to 3,25 mg/kg orally, twice daily allowed if grade ≥ 2 adverse events occur | Clinical outcomes: tumor response, progression-free survival, overall survival and adverse events | Tumor response: best response was stable disease after 8 weeks in one patient<br><br>Progression and overall survival: 2 early death (1 of unknown cause, 1 of pulmonary embolism);<br>2 patients with disease progression within 8 weeks<br>Adverse events: severe adverse events (grade ≥ 3) were pulmonary embolism, hyponatremia, abdominal pain, volume depletion, lower extremity edema and elevated liver enzymes<br><br>Other outcomes:<br>2 patients withdrew consent | Study closed prematurely due to safety concerns<br><br>Association of the early death with the application of DCA is unclear |

Table continued

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| Chu 2015 | Experimental, uncontrolled (phase I) | 24 patients with different, treatment refractory, advanced solid tumors<br><br>22 patients had prior chemotherapy (1 to 8 different drugs), 14 patients had prior radiation therapy | Intervention:<br>16 patients received DCA 6,25mg /kg twice daily for -28 days.<br>7 patients were treated after dose escalation to DCA 12,5mg / kg twice daily for 28 days,<br>until disease progression or unacceptable toxicity | Clinical outcomes: tumor response, adverse events<br><br>Other outcomes: tumor metabolic activity, DCA pharmacokinetics | Tumor response: best response was<br>stable disease in 8 patients with median duration of 55 days<br><br>Adverse events: of the 12,5mg group 3 patients had grade 3 toxicities: nausea, vomiting, diarrhea and fatigue<br>6,25mg group: 3 patients had grade 3 toxicities: neuropathy and fatigue<br>Common adverse events of any grade were:<br>fatigue, neuropathy, anorexia, nausea and vomiting<br><br>4 patients withdrew consent | Small experimental study with 8 stable diseases in 13 patients |
| Dunbar 2014 | Experimental, uncontrolled (phase I) | 13 patients with progressive glioma grade III-IV<br>2 patients with brain metastatic solid tumor (uterus and lung adenocarcinoma<br><br>Average number of previous cytotoxic therapies was 2.8 | Intervention:<br>At begin of study treatment with DCA 8 mg/kg orally twice daily for 4 weeks; depending on toxicity<br>dose escalation to DCA 12,5mg / kg KG) or de-escalation to DCA 5 mg/kg twice daily for 4 weeks for the following patients.<br>Later dosing dependent on patient genotype: 4mg for “slow- metabolizer”, 8mg for “fast-metabolizer” | Clinical outcomes: tumor response, adverse events<br><br>Other outcomes: plasma and urine concentration of DCA and maleylacetone, pyruvate breath test and genotype of glutathione transferase zeta 1/maleylacetoacetate isomerase (GSTZ1/MAAI) | Clinical response: best response was stable disease in 8 patients after 4 weeks of treatment.<br><br>Adverse events: No adverse events ≥ grade 3<br>Lower grade adverse events were neuropathy, gait disturbance and fatigue | 6 of the 15 patients were regarded as not evaluable due to withdrawal or medical deterioration |