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NAVAL HOSPITAL

NATIONAL NAVAL MEDICAL CENTER

BETHESDA, MARYLAND - 20014

IN REPLY REFER TO
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14 August 1972

From: Commanding Officer, Naval Hospital, NNMC, Bethesda, Md. 20014
To: Secretary of the Navy, The Pentagon, Washington, D. C. 20350
Via: Chief, Bureau of Medicine and Surgery, Navy Department, Washington, D. C. 20390

Subj: Case of Darlene RITTER; permission to use whole-body irradiation in

Encl: (1) Clinical Summary of RITTER

1. Patients with leukemia suffer from an invariably fatal disease. The typical course is characterized by a series of treatments with chemotherapeutic agents, each followed by a remission of the disease progress. Eventually the leukemia becomes resistant to all of the usual regimens of chemotherapy, and at this point the only possibility of extending the life of the patient lies with the use of massive doses of some cytotoxic agent (irradiation or drugs) followed by bone marrow transplantation. Only patients who have reached the end of conventional therapy and who have a matched sibling donor can be considered for this extreme form of treatment.

2. The benefits of this last resort in leukemia therapy must be weighed against the risks. Without this effort, the patient has at best only a few weeks of life; and there is a good chance of significant benefit from the procedure. Roughly half the leukemic patients transplanted according to the more recent protocols experience a remission of three months or more, and at least two cases have been disease-free for two years after the transplant, suggesting the possibility of a true cure. On the other hand, even with the best protocols nearly half the transplanted patients receive no benefit. Some continue their terminal course; in some the demise is hastened by increased susceptibility to infection in the post-transplant period; and some are killed iatrogenically by the graft-vs-host disease resulting from a successful engraftment. In brief, the prospect of bone marrow transplantation offers a real possibility of palliative improvement to patients in an otherwise hopeless condition.

3. Two modes of pre-treatment of the leukemic patient have been attempted in the past: Whole body irradiation and chemotherapeutic agents. Both of these modalities of treatment have their advantages; both types of treatment are presently being used by various bone marrow transplant clinical research centers; and a major effort is being made by these research centers to determine whether whole-body irradiation

or chemotherapeutic agents better prepare the leukemic patient for marrow transplantation.

4. Occasionally a transplant candidate appears in whom one of these two modalities of therapy is specifically contra-indicated. Such a patient is currently under treatment at the Bethesda Naval Hospital. (See attached clinical summary on RITTER, Darlene, enclosure (1)). Because the various chemotherapeutic regimens used in the treatment of her leukemia have included repeated exposures to the agents ordinarily used with the transplant pre-treatment regimen, the leukemia has become refractory to these agents. An attempt to transplant this patient using the chemotherapy regimen would probably be unsuccessful. Engraftment would be unlikely, then the patient would become sensitized to the donor's minor antigens, thereby rendering a second transplant attempt more dangerous or impossible. Whole-body irradiation is far more likely to achieve the desired effects and is, therefore, the treatment of choice in this patient as part of the bone marrow transplantation protocol.

5. Whole-body irradiation is quite feasible at the NNMC since both a qualified radiotherapist (who is a member of this Committee) and a suitable radiation source (the cobalt 60 facility at AFRRI) are available.

6. The major objection to the use of supralethal doses of total body irradiation for the treatment of patients seems to relate to the politically sensitive nature of this topic.

7. The use of whole-body irradiation in the case of Darlene RITTER is clinically indicated and is not an object of research. The clinical research protocol associated with the bone marrow transplantation program is directed towards studies of the chimeric state, to which the irradiation, as a contributing factor in the development of this state, is incidental. In many cases, the use of a drug such as cyclophosphamide could be used to produce the same desired effects. In the case at hand, however, irradiation is clinically indicated as a therapeutic modality, and permission to utilize it is requested on this basis.

8. The Bone Marrow Transplantation Selection Committee of this command has reviewed this case and has recommended total body irradiation as a preparation for bone marrow transplantation in this case. Members of this Committee are listed below and represent all concerned Services:

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CAPT Kenneth SELL, MC, USN
Chairman, Bone Marrow Selection Committee

CAPT John VINCER, CHC, USN
Head, Religious Activities, Naval Hospital, Bethesda

CDR Ross MOQUIN, MC, USN
Head, Hematology Branch, Medical Service, [illegible] Hospital, Bethesda

CDR Elliot PERLIN, MC, USN
Hematology Branch, Medical Service, Naval Hospital, Bethesda

LCDR John CURRY, MC, USN
Head, Tissue Bank, Naval Medical Research Institute, Bethesda

LCDR Richard CAHILL, MC, USNR
Pediatric Hematologist, Naval Hospital, Bethesda

LCDR David KARP, MC, USNR
Radiation Therapy, Naval Hospital, Bethesda

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