Reviewer’s report

Title: Intraoperative radiation therapy (IORT) for previously untreated malignant gliomas: a matched pair analysis

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Reviewer: Dr Michael Brada

Level of interest: not specified

Advice on publication: Other (see below)

General comments

1. The authors report an interesting examination of IORT as additional treatment in patients with malignant gliomas. The conclusion is that this is not a useful treatment and it can be reasonably arrived at on the basis of the data provided.

2. It would strengthen the manuscript and its conclusion if the authors gave some attention to methodological details as specified below.

3. The manuscript would also be helped by a slightly expanded discussion including more up-to-date glioma literature - the majority of non-IORT papers are from 1980s.

4. The style and grammar need some attention.

Detailed comments

1. Introduction

1.1 The study of Walker et al only showed benefit for dose escalation up to 60Gy.

1.2 Chang et al (Chang et al., 1983) have shown no further benefit for dose up to 70Gy and the only
published randomised trial of brachytherapy boost also failed to show benefit (Laperriere et al., 1998).

2. Methods

2.1 It is assumed that this study was retrospective and this should be stated.

2.2 It is not mentioned if the protocol was approved by an ethical committee and if patients were asked for informed consent.

2.3 There is no information on the criteria for selection of patients for this procedure. Why were, on average, only two patients treated per year?

2.4 The timing of external beam radiotherapy in relation to surgery/IORT would be of interest. Was GTV based on preoperative or postoperative images?

2.5 The details of patient population as shown in Table 1 would best be shown here. One of the most important prognostic parameters in patients with high grade glioma is performance status and information on this must be added.

2.6 The details of the methodology of selection of matched patient population should be provided, particularly as the abstract states these were selected "randomly”.

2.7 There is no mention of the methods of clinical assessment particularly as regards to toxicity.

2.8 There is no statistical design information which would help to assess the power of the study. It is assumed as this was a retrospective study, it is unlikely to have been performed.

3. Discussion

3.1 Increase in radiation dose is one of the possible ways of attempting to improve local tumour control and is not the way.

3.2 Reference to studies attempting to increase tumour dose through others radiotherapy techniques should be made.

3.3 Discussion would be enhanced by acknowledging some of the potential problems in a study of this type. A particular issue is that of a small number of heterogeneous patients and the statistical consequences.

References:

Competing interests:

None declared.