ANTIBIOTIC SWITCH THERAPY AUDIT

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INTRODUCTION

The term 'switch therapy' is one of the most talked-about topics in antimicrobial therapy today⁽¹⁾.

Switch therapy is best defined as the conversion of intravenous to oral therapy as soon as the patient is judged suitable and without the loss of antimicrobial potency⁽²⁾. If this change is accomplished with the same antibiotic then the change is described as 'step down therapy'. If a different drug is to be used then it is defined as 'sequential therapy'⁽¹⁾.

The benefits of successfully-implemented switch therapy are numerous and can be considered in social, ethical and financial terms.

Analysis of the cost of intravenous antibiotics often stops at the unit price paid by pharmacy for the drugs themselves. In many cases, however, this figure represents only a small fraction of the total cost involved in the intravenous preparation. The costs soar when other factors such as the cost of diluents, giving sets, drip counters, cannulas and dressings are considered. The increased nursing time required for the initiation and maintenance of intravenous therapy is also a factor to be considered. Switch therapy may allow the duration of hospital stay to be reduced as well as the frequency of concomitant infections. These are both important financial considerations.

From the patients' point of view prompt intravenous to oral switch also confers many advantages, not least the fact that patients are free of their six-foot stainless steel friend which has accompanied them day and night for some time. Repeated painful cannulation can often be reduced, as can the likelihood of phlebitis and other problems associated with longer-term venous cannulas.

AIMS

The principal aim of the switch therapy audit was to determine the current timing of antibiotic switch in a sample of patients started on intravenous antibiotics.

We also looked at whether the timing of switch therapy was appropriate, based on standards compiled from a literature search.

As a result of the audit it is hoped that medical and nursing staff will become more aware of the issues surrounding antibiotic switch therapy and that guidelines may be issued so that practice changes in order to ensure switch therapy is carried out correctly.

AUDIT STANDARDS

During November 2003 a literature search was carried out to

locate any current guidelines on intravenous switch therapy as well as any studies carried out with similar aims to those stated above.

From this search a set of standards was compiled to be used as a benchmark in this audit. The standards defined were split into inclusion and exclusion criteria. The inclusion criteria were those by which it was deemed that a patient was ready for intravenous to oral switch. The exclusion criteria were used as standards to represent special criteria that despite fulfilling the inclusion criteria for switch, it would be appropriate to continue intravenous therapy. They are summarised below.

Inclusion criteria

- >24 hours IV therapy
- afebrile >24 hours (<37.5°C)
- able to take oral medication

Exclusion criteria

- NBM/ GI absorption problems
- neutropenia, leukaemia or lymphoma
- abscess
- bacterial endocarditis
- severe soft tissue infection
- osteomyelitis
- meningitis
- other – stated

METHODOLOGY

Fifty medical patients who had undergone intravenous-to-oral switch therapy at some point were randomly chosen for audit. Each case was considered and the most appropriate point of switch determined. The point at which the antibiotic was actually changed was then recorded. Each case was also examined for any exclusion criteria indicating that it should be excluded from switch at the determined point. These patients were not considered in the analysis of the data collected.

Once the data for all fifty patients had been collected they were analysed in order to identify the proportion of patients in which switch therapy was carried out at the appropriate time. Demographic information was also collected and considered in the analysis of the data.

DEMOGRAPHICS

In total, fifty patients were considered for the audit. This sample consisted of 16 male and 34 female patients. The mean age was 78 years and the range 18 to 103 years.

Six of the fifty patients in the sample satisfied the exclusion criteria:

- 3 NBM
- 2 severe soft tissue infection
- 1 specifically requested by consultant.

RESULTS

The data collected were used to calculate a value for each patient, whose magnitude represents how close the actual day of switch was to that recommended. This figure as a negative value shows the number of days early the switch took place and as a positive value, the number of days late.

Less than half of the patients considered in the audit underwent switch therapy at the recommended time. Figure 1 summarizes clearly the percentage of patients who were switched early, at the recommended time, and those switched late.

Figure 2 shows a breakdown of the data collected, showing the number of patients vs the day of actual switch when compared to the recommended day (taken as day 0). This graph shows that those patients whose antibiotics were changed late had between one and four days extra intravenous therapy.

Figure 1 Percentages of patients switched at recommended time, early and late

Figure 2

In the sample of fifty patients considered this equates to a total of 33 unnecessary days of antibiotics.

CONCLUSIONS

This audit addresses the importance of accurate timing of antibiotic switch therapy. In the introduction the ethical, social and financial consequences were considered. The results of the audit show that when tested against the standards set, less than half of the patients studied underwent switch therapy at the appropriate time. It is hoped that through presentation of this audit awareness has been raised as to the issue of antibiotic switch therapy and that in future it is carried out with more consideration and at a more appropriate point.

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REFERENCES

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