Audit of Outcomes of Patients Discussed at the Cancer of Unknown Primary (CUP) Multi-Disciplinary Team (MDT) at UHCW (01/09/15-01/10/17)

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Introduction

Upon diagnosis of cancer, identification of the primary is integral to management. In 3% of cases, the primary cause is not identified and are termed Cancer of Unknown Primary (CUP)[1,2]. Despite the small incidence, it remains the fourth most common cause of cancer death in England and Wales[3]. The ambiguity of the primary can cause significant psychological distress, and means investigations can be extensive; treatment often delayed and empirical; and prognosis poor, with median survival being 3-4 months from the time of diagnosis[4]. In 2010, NICE released guidelines (CG104) to improve care of CUP patients involving: 1) formation of a CUP multi-disciplinary team (MDT); and 2) an audit of the incidence of CUP, its timely management and patient outcomes to be maintained[3].

Aims & Objectives

The purpose of this audit is to monitor current practice at UHCW against the national (NICE CG104) and local (West Midlands Investigation & Management Policy 2014-18) guidelines and produce a report on patient outcomes of those discussed by the UHCW CUP MDT. The aims and objectives are to:

- Record incidence and outcomes of all patients discussed at the MDT
- Compare CUP MDT performance against guidelines

Methods

A data collection tool was created on Microsoft Word to extract all relevant information (demographics, admission and presentation, investigations, MDTs and outcomes, diagnosis, management, survival) retrospectively from the UHCW Clinical Results Database (CRRS). All patients who were discussed at the UHCW CUP MDT between 1st September 2015 to 1st October 2017 were selected. Data was collated and analysed on Microsoft Excel and converted into graphical representations.

References

1. **Pavlidis, N, et al.** 14, 2003, European Journal of Cancer, Vol. 39, pp. 1990-2005.
2. **Cancer Research UK.** 2014. [Available online from: http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/cancer-of-unknown-primary.]
3. **NICE.** 2010. [Available online from: https://www.nice.org.uk/guidance/cg104/chapter/introduction.]
4. **Altman, E and Cadman, E.** 1, 1986, Cancer, Vol. 57, pp. 120-4.

Key Terms

- **Provisional CUP (pCUP):** a patient with CUP not biopsied. Likely diagnoses were made on the basis of clinical findings and clinical biochemistry. Reasons for not having a biopsy included: high performance status, personal choice, and death.
- **Confirmed CUP (cCUP)**: a patient who remains CUP despite histological findings.
- **Pure CUP**: when a cancer displays no disposition towards a specific primary site.

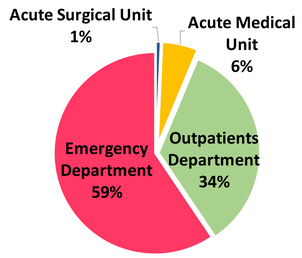
Results & Discussion

A total of 177 patients were discussed at 56 CUP MDTs at UHCW over the period 01-09-15 to 01-10-17. Patients were aged between 31-99 years with a bimodal distribution peaking at 72 and 81 years. 48% were female and 52% were male.

1. **Incidence**
   - Only 45% were GP referrals, with the majority of patients presenting in the ED, with vague symptoms of weight loss, pain, shortness of breath; or for a different illness where the malignancy was found incidentally.
2. **MDT Performance**
   - Referral dates to the MDT not recorded so timeliness could not be assessed.
3. **Performance Status**
   - Only 35% of patients had their performance status recorded at admission. This included 25 patients who were biopsied with a performance status of 2 or more, suggesting investigations may have been unnecessarily performed, as the management may not have changed.
4. **Outcomes by Diagnosis**
   - Only one-third were given a primary and referred onto site-specific MDTs.
   - Of the 95 deemed CUP: 57 were pCUP; and 38 were biopsied (cCUP).
   - Of the 15 patients that were benign, the most common causes were osteoporosis and pneumonia.
   - Adenocarcinomas were the most common histopathological type that lead to an ambiguous CUP presentation; possibly explaining why the most common likely diagnoses of CUP patients were lung, gastrointestinal, pancreatic, and prostate.
5. **Outcomes by Survival**
   - 86 (48.6%) patients have died: of which 43 (50%) died within the first 30 days, including 9 patients who died on the day of, or before the CUP MDT.
6. **Outcomes by Management**
   - 30 pCUP patients had management recorded, of which 100% received supportive/palliative care. Decision to treat took an average of 11 days following first MDT.
   - 31 cCUP patients had management recorded, of which: 90.3% received supportive/palliative care; 1 received chemotherapy; and 2 received hormone therapy. Time from first MDT to decision to treat took longer, at an average of 26.5 days. Although these patients were subjected to extensive investigations, management was almost always identical to those with pCUP; questioning the necessity of these investigations.

Where did patients present?

Route of Admission

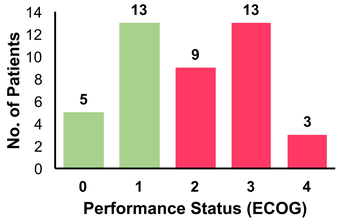


How did patients present?

Top 10 Presenting Complaints	
Weight Loss	40
Chest/Abdominal Pain	36
Shortness of Breath	30
Loss of Appetite	27
Back Pain	27
Neurological Symptoms	26
Nausea/Vomiting	17
Altered Bowel Habit	15
Mass	13
Pain (other)	13

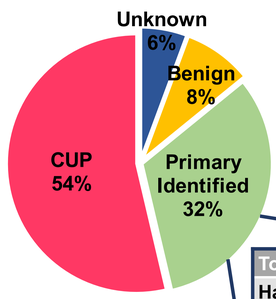
Are patients being unnecessarily biopsied?

Performance Status of Patients who were Biopsied



In how many patients could a primary be found?

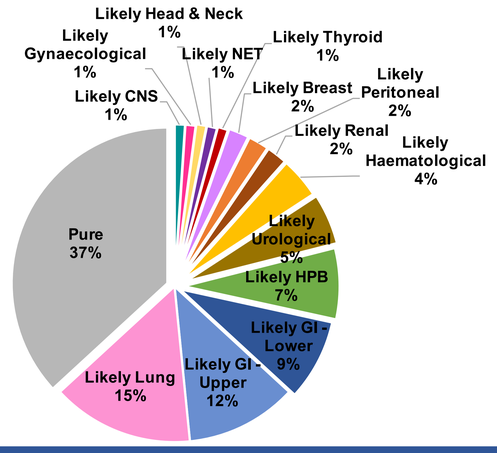
Diagnoses of All Patients Discussed



Top 5 Primary Sites	
Haematological	13
Lung	8
Breast	7
GI - Upper	5
Peritoneal	4

Of those diagnosed with CUP, what were their likely primary sites?

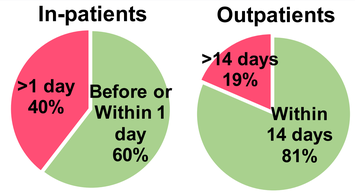
Likely Diagnoses of Patients with CUP



What type of histology leads to a CUP presentation?

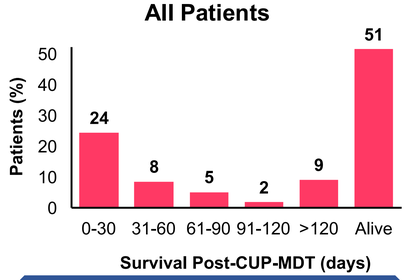
Top 5 Histological Types	
Adenocarcinoma	46
Carcinoma	6
Myeloma	6
Glioblastoma	3
Small Cell Carcinoma	3

Are oncologists reviewing CUP patients within recommended timelines?



What was patient survival following the CUP MDT?

Survival Post-CUP-MDT for All Patients



How does route of admission affect survival?

Three-Month Survival Rates	Admission Route	
	ED	OPD
All patients	48%	69%
CUP patients	30%	57%

Conclusion

- **No primary** could be found in **half** of the patients discussed at the UHCW CUP MDT over the two-year period.
- **Three-fifths of CUP patients presented as emergencies**, which is a similar proportion for all cancers.
- Three-month **survival rates** for all patients discussed by the CUP MDT were **increased by one-fifth** if admitted as an **outpatient**.
- **Non-specificity of symptoms** remains a barrier to improving earlier identification.
- In terms of MDT performance, there are still **40% of in-patients** not seen within the recommended timeline, and nearly all CUP patients are managed by **supportive or palliative care**, despite considerable investigations.

Recommended Actions

1) **Updating the CUP MDT proforma** to include **performance status** and **date of referral** to MDT to prepare for the re-audit;
2) **Prioritising** the timely **review of in-patients** by oncologists and accurate updating of CRRS to reflect this, to work towards the **100% target**;
3) **Present** the findings of this audit to **primary care services** to improve the proportion of **GP referrals**, allowing for earlier, more efficient management;
4) **Present** the findings at the **Oncology Quality Improvement & Patient Safety** (**QIPS**) meeting and **Grand Round** at UHCW to raise awareness of this vulnerable group and ensure **all CUP patients are being captured by the MDT**;
5) **Proper evaluation** of **patient suitability for investigations**, including performance status, prognostic factors, patients' values, and wishes;

Collectively, these actions should aim towards improving the proportion of CUP cases who are diagnosed with a primary and receive tailored, site-specific treatment, or start the palliative care pathway in a timely fashion.