An experience of **FOLFIRINOX** chemotherapy in advanced pancreatic cancer; a retrospective analysis

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Background FOLFIRINOX is a combination of five chemotherapy agents widely recognised as the most active regimen for advanced pancreatic cancer. However it is a tough and toxic protocol with many side effects and potential for hospital admissions.

With a very aggressive and often incurable disease,there is a key focus on time away from hospital and quality of life. Palliation is the mainstay of treatment We therefore audited our practice of patients receiving this regimen over a 2 year period with particular focus on admissions.

Methods The Sussex Cancer Centre's (SCC) catchement area covers a coastal population of around 1.2 million people (Jan 2012). It provides services across multiple trusts and several hospitals.

28 patients who received FOLFIRINOX chemotherapy for advanced pancreatic cancer over a two year period (Dec 2013 to Nov 2015) were identified.

Through the use of electronic patient records and reviewing case notes, data were collected on patients' demographics, cancer stage, site of known metastases, baseline albumin, co-morbidities and Ca19-9 tumour marker level.

The endpoints identified were the number of cycles completed, the number of hospital admissions, any major treatment-related complications and time to disease progression and/or death.

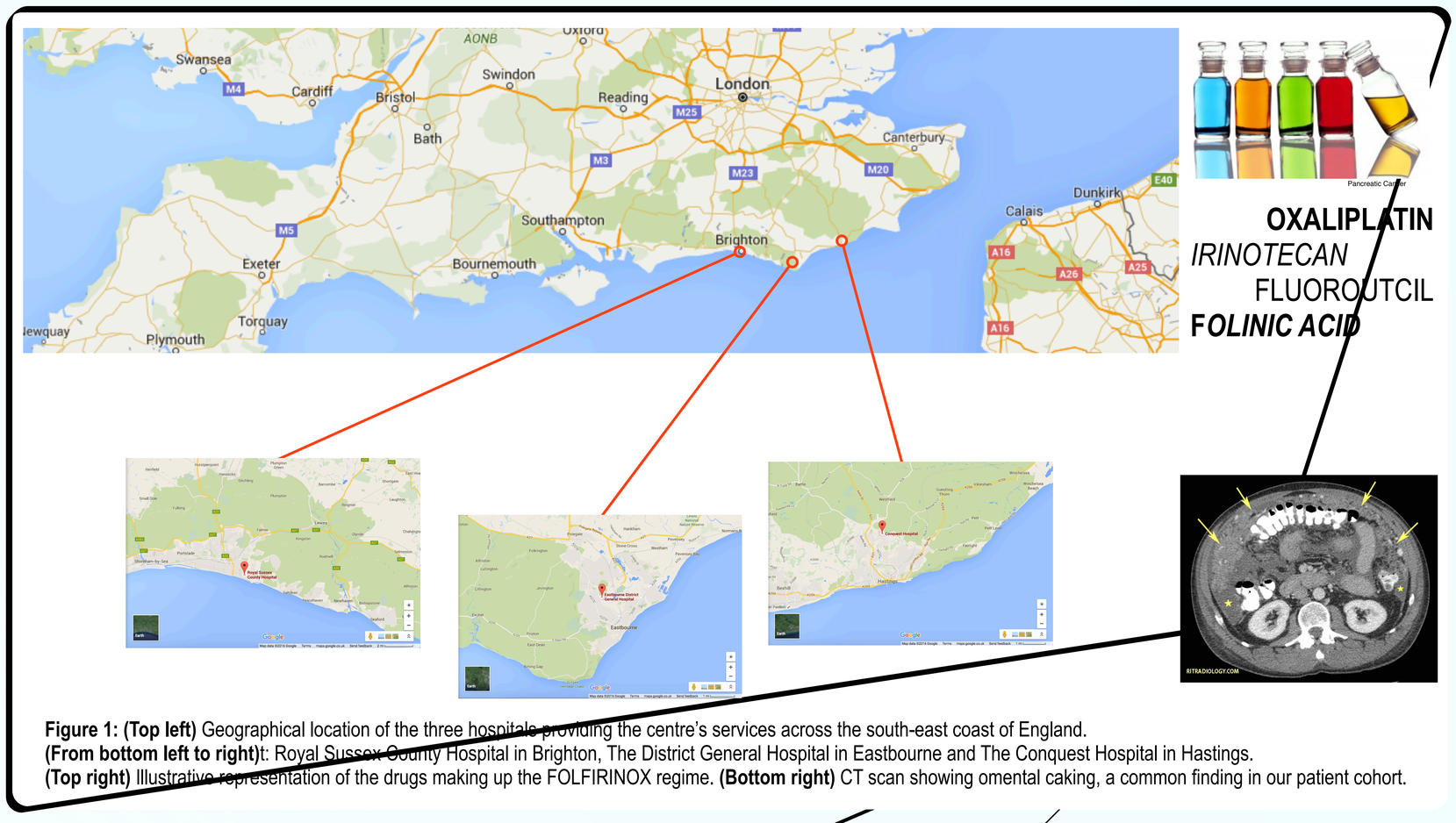

Figure 1: (Top left) Geographical location of the three hospitals providing the centre's services across the south-east coast of England. **(From bottom left to right)**t: Royal Sussex County Hospital in Brighton, The District General Hospital in Eastbourne and The Conquest Hospital in Hastings. **(Top right)** Illustrative representation of the drugs making up the FOLFIRINOX regime. **(Bottom right)** CT scan showing omental caking, a common finding in our patient cohort.

Results The average age of the patients was 60 (range 44 - 73) with a 3:2 male:female ratio. 17 (61%) had proven radiological metastatic disease at presentation of which the majority (11/17) were liver metastases.

Of the 25 cases where the Ca19-9 tumour marker protein had been measured, it was elevated in 23, and significantly elevated (>5x upper limit of normal) in 17 (72%).

Response rates to chemotherapy were 6/22 radiologically (27%) and 6/26 based on a fall in Ca19-9 (23%). There were 3 neutropenic septic episodes recorded resulting in hospital admission.

In total there were 25 patient inpatient admission episodes on treatment - see graph. There was unfortunately 1 'thirty day death' linked to FOLFIRINOX chemotherapy.

Interestingly, albumin serum levels, a simple, non-invasive test was a good predictor of a poor outcome after treatment. Possibly as a surrogate marker of disease burden and physiological reserve

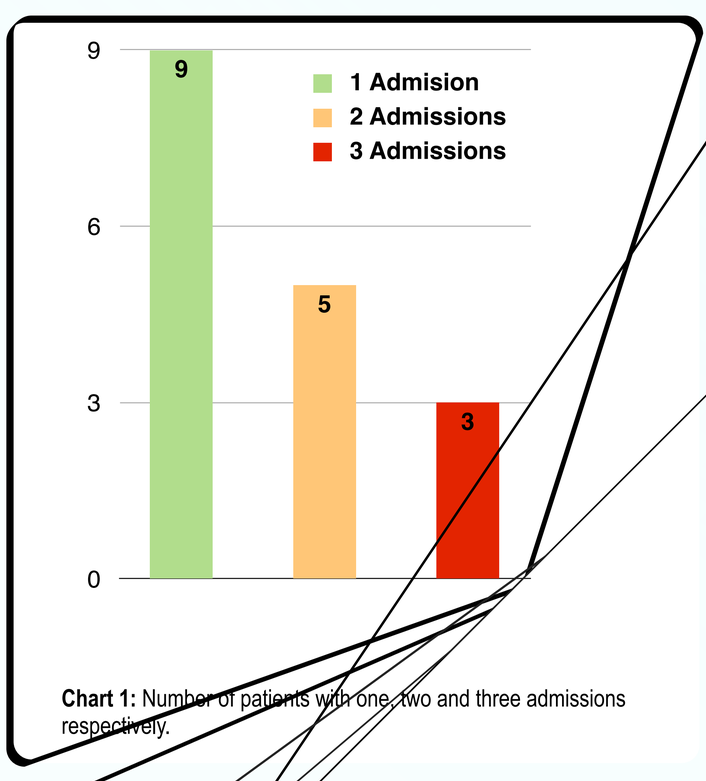

Chart 1: Number of patients with one, two and three admissions respectively.

Conclusion The demographics, and cancer details of the patients treated in our audit are broadly similar to those treated in the clinical trials which demonstrated the benefit of this chemotherapy regimen.

As highlighted in Conroy et al's study (2011), published in NEJM, the survival advantage of FOLFIRINOX chemotherapy was met with a signifcant increase in toxicity.

This translates to a not so insignificant admission rate of patients on FOLFIRINOX in our 'real-life' experience, with a total of 25 in-patient episodes.

However, it is important to note that several of these admissions were with cancer related complications and not as a result of chemotherapy sequelae. This patient group needs close observation during treatment to ensure the quality of life and time away from hospital target is achieved in addition to meaningful cancer responses.

Despite a small study group, patterns emerge out of the data which are worth further discussion. See figures opposite.

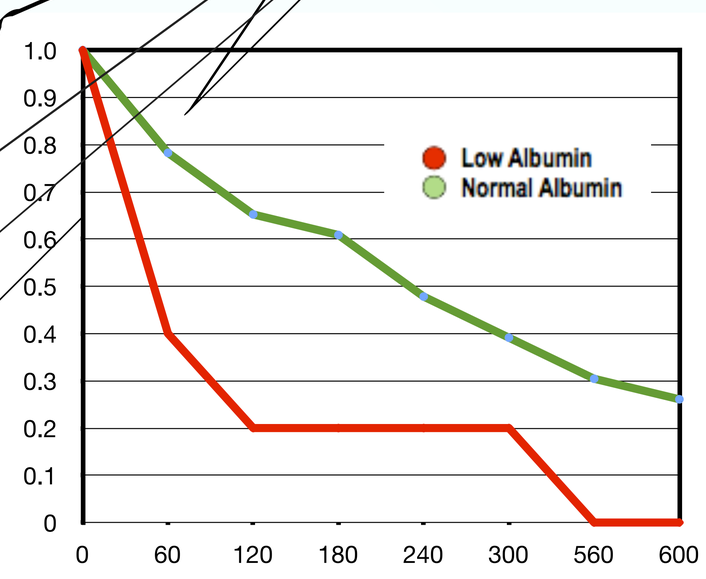

Chart 2: Progression free survival of patient groups with low vs normal serum albumin on starting chemotherapy.

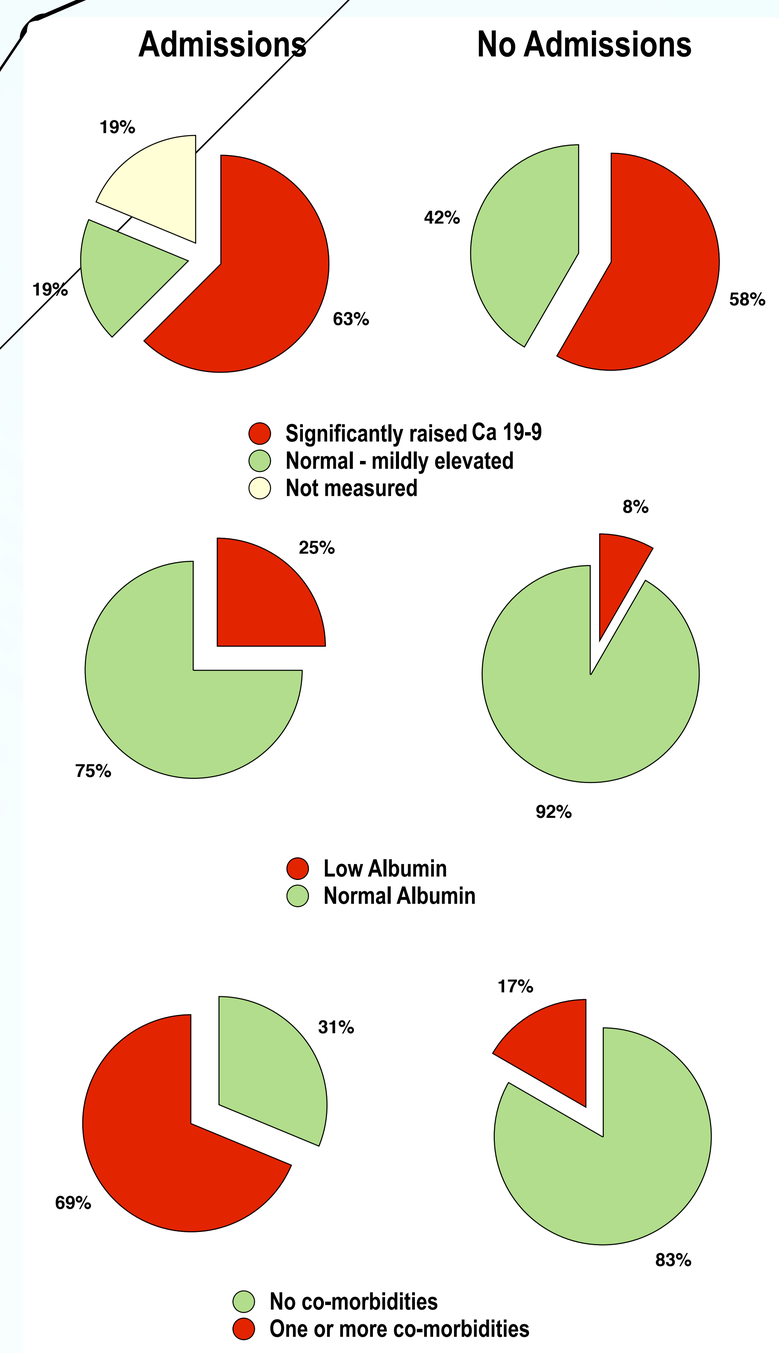

Chart 3: Side by side comparison of patients who were admitted, and those who managed to avoid hospital stay. Could admissions be predicted based on baseline measurements? From top: Ca19-9 baseline serum level, serum albumin and presence of co-morbidities

Conclusion

References

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Clinical Pancreatic Cancer
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DOI: 10.3252/pso.eu.18wgic.2016
Poster presented at: ESMO 18th World Congress on Gastrointestinal Cancer
PosterSessionOnline.com